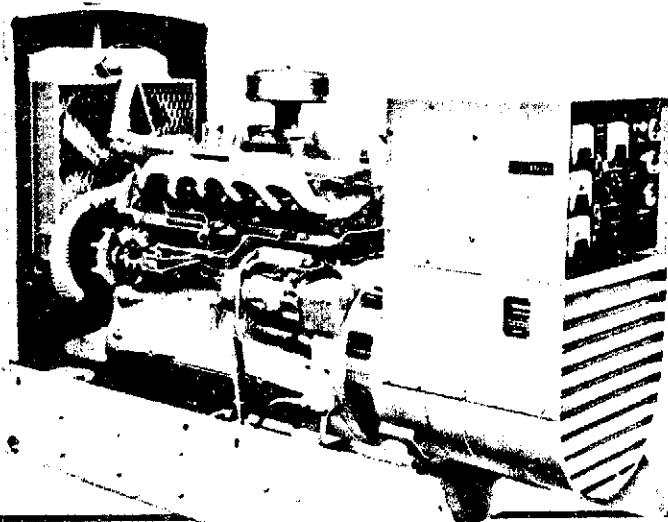


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has gaps in its page
numbers, or doesn't
have any numbers.

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Onan

**Parts
Manual
DDB
LDDB
GenSet**



944-0220

11-82 (SPEC A-E)

Replaces

8-80 (Spec A-E)

Printed in U.S.A.

GENERAL INFORMATION

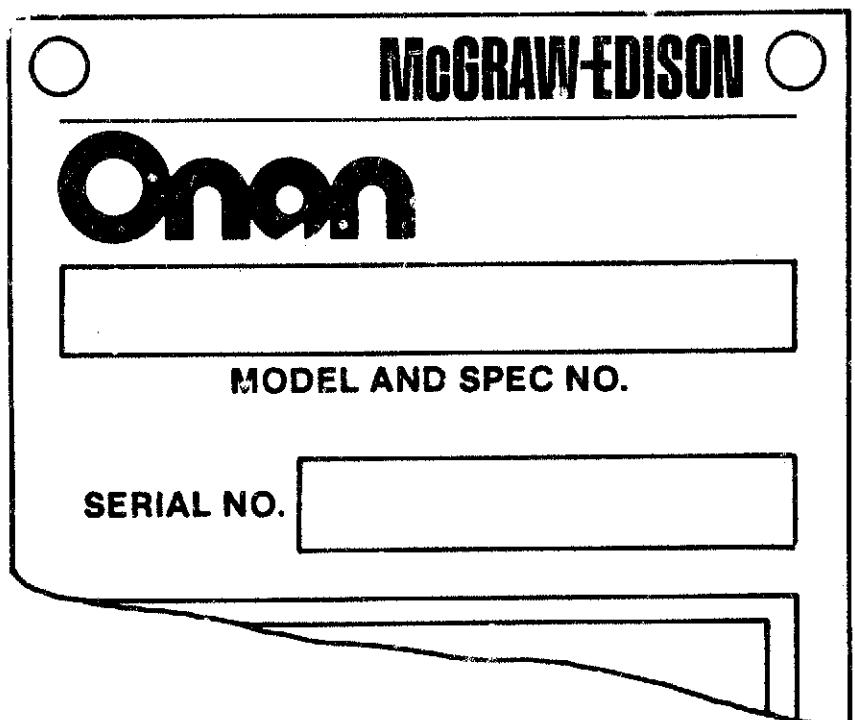
INSTRUCTIONS FOR ORDERING REPAIR PARTS

For parts or service, contact the dealer from whom you purchased this equipment or refer to your Nearest Authorized Onan Parts and Service Center.

To avoid errors or delay in filling your parts order, please furnish all information requested.

Always refer to the nameplate on your unit.

1. Always give the MODEL, SPEC NO. and SERIAL NO.



For handy reference, insert "YOUR" nameplate information in the spaces above.

2. Do not order by reference number; always use part number and description.
3. Give the part number, description and quantity needed of each item. If an older part cannot be identified, return the part prepaid to your dealer or nearest Onan Parts and Service Center. Print your name and address plainly on the package. Write a letter to the same address stating the reason for returning the part.
4. State definite shipping instructions. Any claim for loss or damage to your unit in transit should be filed promptly against the transportation company making the delivery. Shipments are complete unless the packing list indicates items are back ordered.

Prices are purposely omitted from this Parts Manual due to the confusion resulting from fluctuating costs, import duties, sales taxes, exchange rates, etc.

For current parts prices, consult your Onan Dealer, Distributor or Parts and Service Center.

"En esta lista de partes los precios se omiten de propósito, ya que bastante confusión resultó de fluctuaciones de los precios, derechos aduanales, impuestos de venta, cambios extrajeros, etc."

Consiga los precios vigentes de su distribuidor de productos "ONAN."

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This parts catalog applies to the standard generator sets listed below. Any engine parts modified or added by Onan will be listed in this catalog and have been assigned Onan part numbers for identification. These modified or added parts supersede similar parts listed in the Engine Manufacturer's manuals. The illustrations are arranged in groups of related items, and each part or assembly is identified by a reference number. All parts illustrated are typical, and unless otherwise mentioned, parts are interchangeable. These typical illustrations are subject to change and reflect only the latest replacement parts arrangement. The Right and Left generator set sides are determined by facing the front end of the engine.

SET DATA TABLE

MODEL IDENTIFICATION	RATING	MODEL IDENTIFICATION	RATING
40.0 DDB - * / # £	40,000 WATTS	50.0 DDB - * / # £	50,000 WATTS
39.0 L DDB - * / # £	39,000 WATTS	46.0 L DDB - * / # £	46,000 WATTS

ELECTRICAL DATA TABLE

* VOLTAGE CODES	VOLTS	HERTZ	WIRE	PHASE	NOTES
3	120/240	60	3	1	
6D	240/480	60	4	3	
7	220/380	60	4	3	
9X	347/600	60	4	3	
15	120/240,	60	12	1	+
15	120/208,	60	12	3	+
	120/240,				
	127/220,				
	139/240,				
	240/416,				
	254/440,				
	277/480				
515	110/220,	50	12	1	+
	115/230				
515	110/190,	50	12	3	+
	110/220,				
	115/200,				
	115/230,				
	120/208,				
	127/220,				
	220/380,				
	230/400,				
	240/416,				
	254/440,				
15R50	@	60	12	3	@+

* - Voltage codes follow model letters designations.

- Specification number; number 1 is standard, all others indicate variations.

£ - Specification letter; letter advances (A to B, B to C, etc.) with major manufacturing changes.

+- These generators are reconnectible, refer to Operator's manual for wiring data.

@ - These are Penn State Sets; special parts are identified in the Parts manual when applicable.

NOTICE!

ITEMS REFERENCED AS OPTIONAL INDICATE PART IS FACTORY INSTALLED AND MAY NOT BE APPLICABLE TO ALL MODELS. FOR FIELD CONVERSIONS ADDITIONAL PARTS ARE USUALLY REQUIRED.

REPLACEMENT ENGINE

ONAN PART NO.

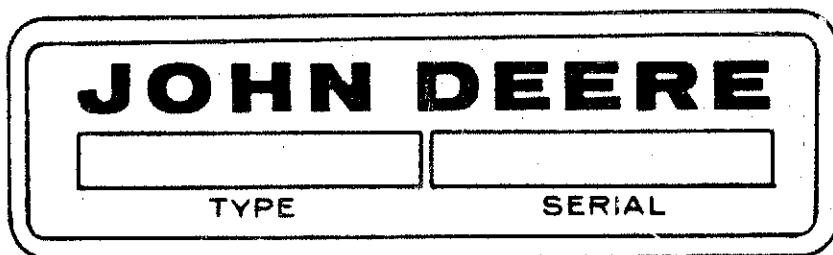
*Engine, Replacement

100-1266 Standard DDB
100-1570 Standard LDDB

Includes: Fuel Pump, Fuel Filters, Oil Filter, Governor, Fan Belt, Flywheel, Flywheel Housing, Water Pump, Alternator Mounting and Adjusting Brackets, Pulley and Vibration Damper.

Excludes: Air Cleaner, Starter, Radiator, Fan Blades, Ammeter, Oil Pressure Gauge and Water Temperature Gauge.

***NOTE:** This replacement engine is for Onan's Standard Spec 1 generator sets, for all other refer to the factory for replacement information.

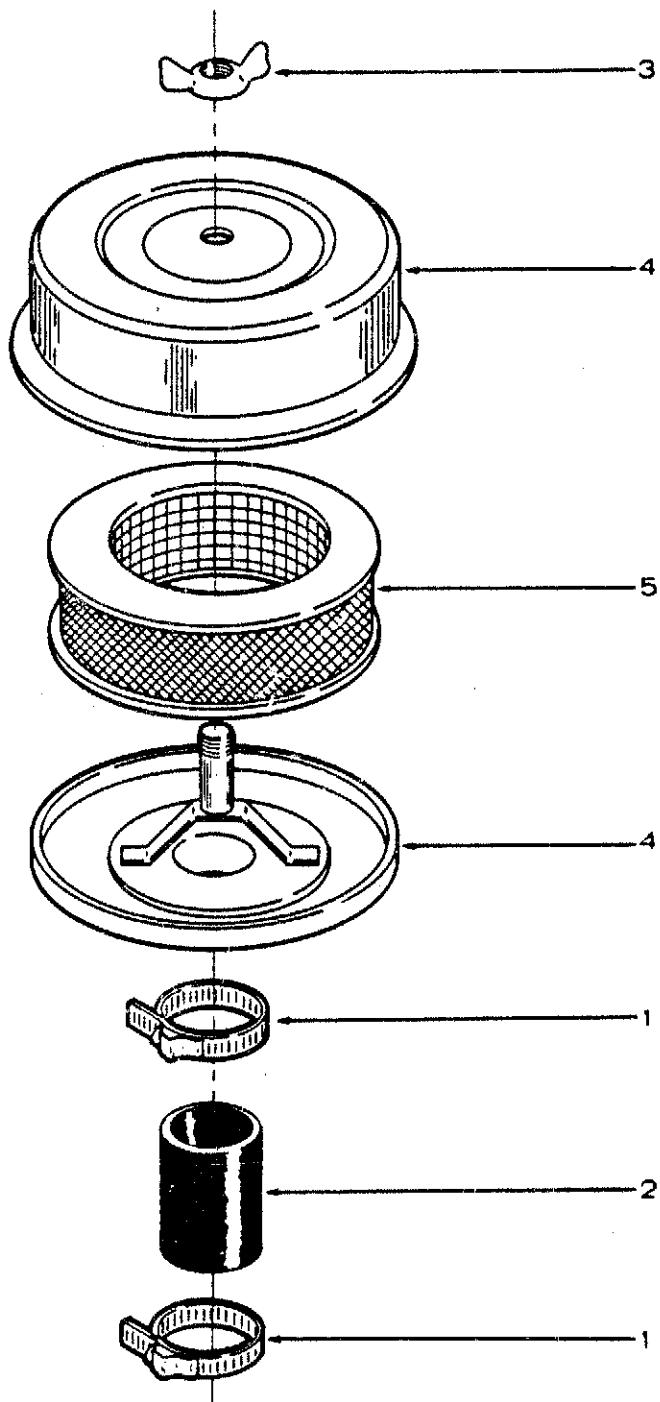


For handy reference, insert "YOUR" name-plate information in the spaces above.

ENGINE REPLACEMENT PARTS

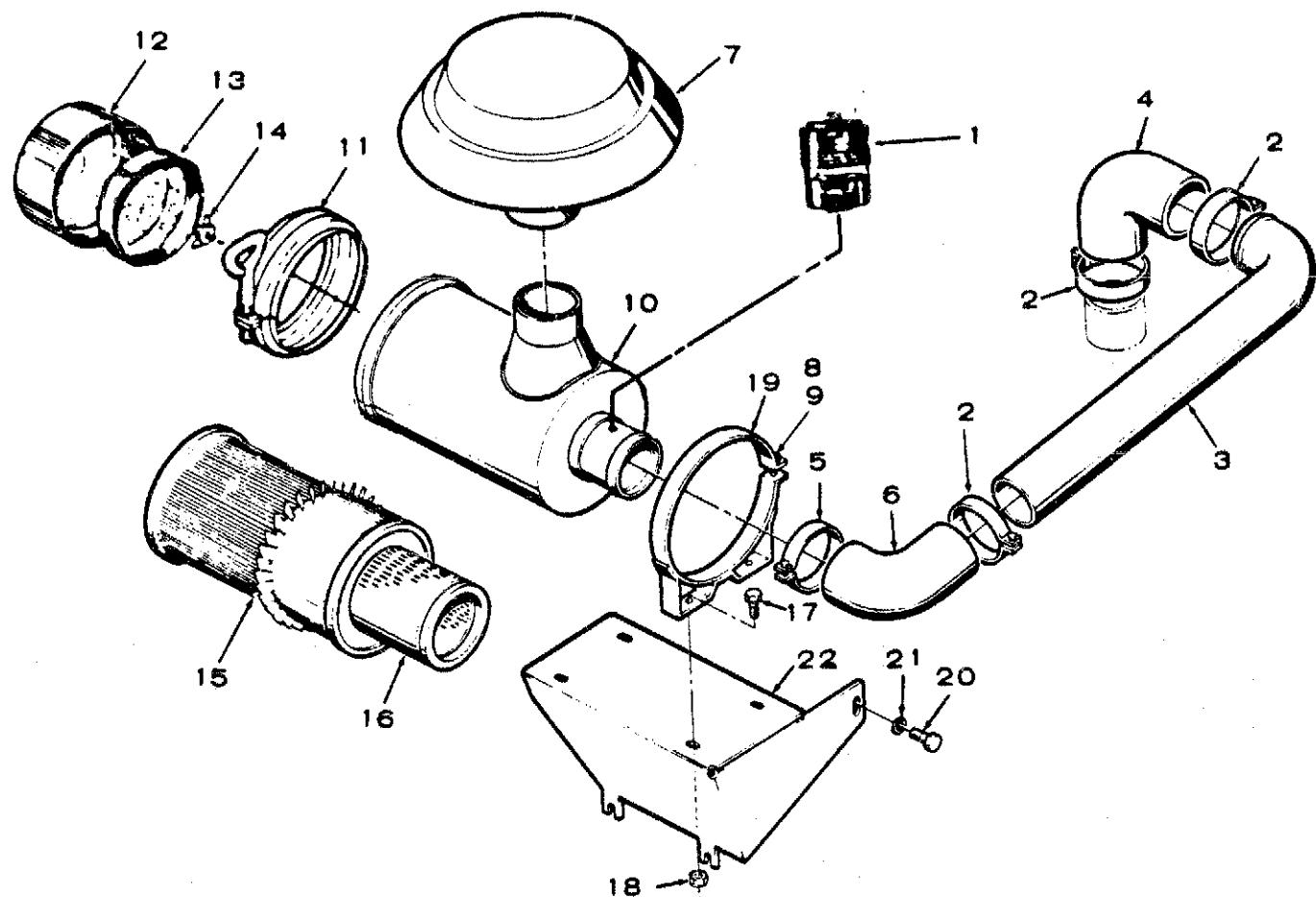
All engine replacement parts must be ordered from the engine manufacturer, except those modified or added by Onan. When ordering engine parts, refer to the manufacturer's nameplate and supply the Model, Spec, Serial numbers and other available information. Refer to the engine manufacturer's manuals for your nearest authorized distributor or parts center; or contact the Onan distributor from whom you purchased this set for assistance in ordering replacement parts.

**AIR CLEANER
DDB**



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	CLAMP, AIR CLEANER HOSE 503-0648 503-0354	2 2	Spec A Only Begin Spec B
2	HOSE, AIR CLEANER 503-0597 503-0809	1 1	Spec A Only Begin Spec B
3	865-0020	1	Nut, Wing (1/4-20)
4	140-1838	1	Air Cleaner Assembly (Includes Element)
5	140-1089	1	Element, Air Cleaner

AIR CLEANER LDBB

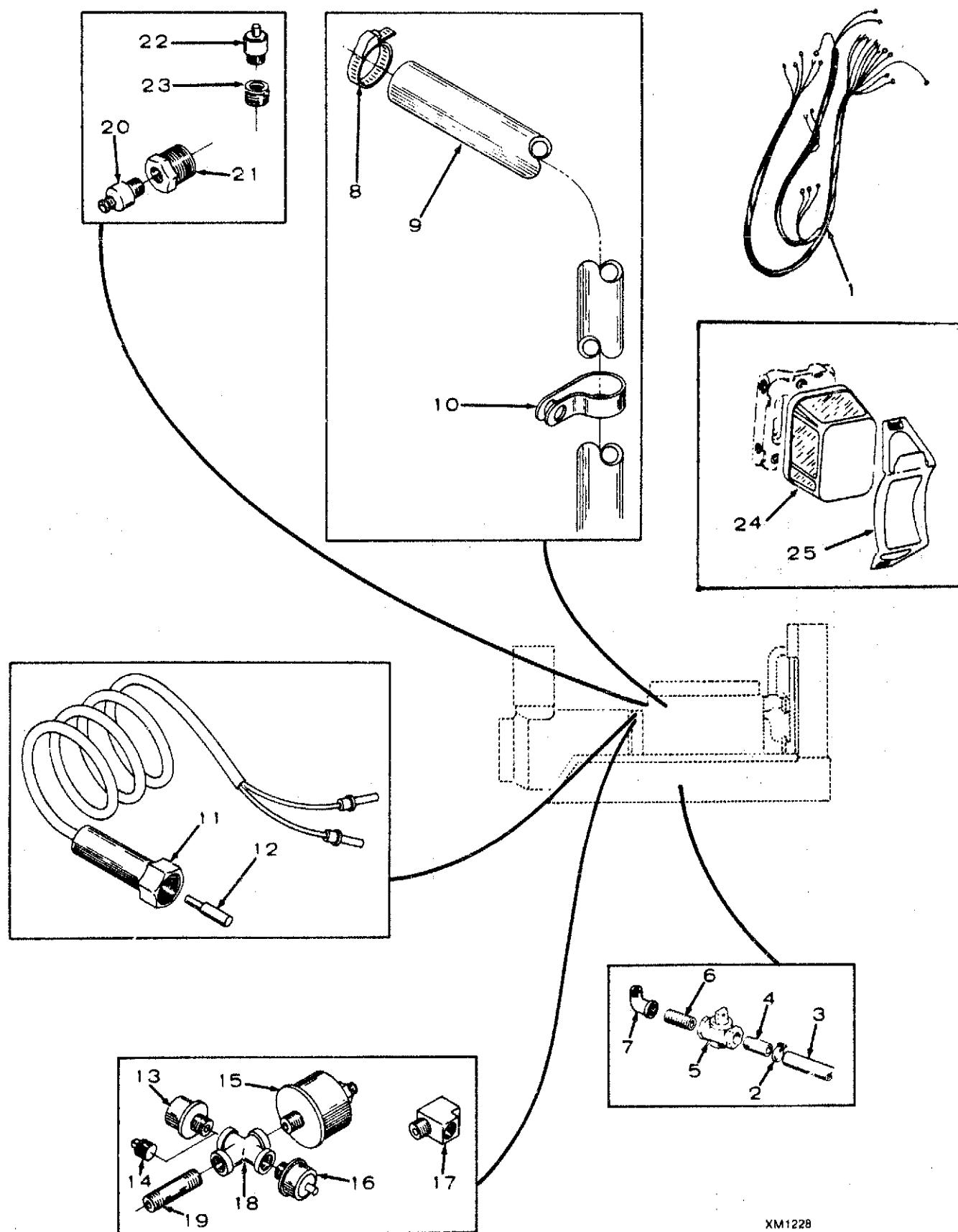


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1548	1	Indicator, Service
2	503-1185	3	Clamp, Hose (T Bolt Type)
3	140-1574	1	Tube, Air
4	140-1573	1	Elbow, Rubber - Reducing, Preformed
5	503-0885	1	Clamp, Hose (T Bolt Type)
6	140-1571	1	Elbow, Rubber - Reducing, Preformed
7	140-1575	1	Hood, Air Cleaner
8	812-0156	2	Screw, Machine - Round Head (1/4-20 x 1-1/2")
9	863-0002	2	Nut, Square (1/4-20)
10	140-1555	1	Air Cleaner Assembly (Includes Parts Marked *)
11		1	*Clamp, Air Cleaner
12		1	*Cup, Air Cleaner
13		1	*Baffle, Air Cleaner
14		1	*Nut, Wing
15	140-1619	1	*Element, Air Cleaner - Primary
16	140-1620	1	*Element, Air Cleaner - Safety
17	800-0027	4	Screw, Cap - Hex Head (5/16-18 x 7/8")
18	870-0257	4	Nut, Self-locking, Hex (5/16-18)
19	140-0317	2	Band, Mounting - Air Cleaner
20	800-0090	1	Screw, Cap - Hex Head (1/2-13 x 1")
21	850-0060	1	Washer, Lock - Spring (1/2")
22	140-1572	1	Support, Air Cleaner

* - Parts included in Air Cleaner Assembly

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**MISCELLANEOUS ENGINE PARTS -
LEFT SIDE**



XM1228

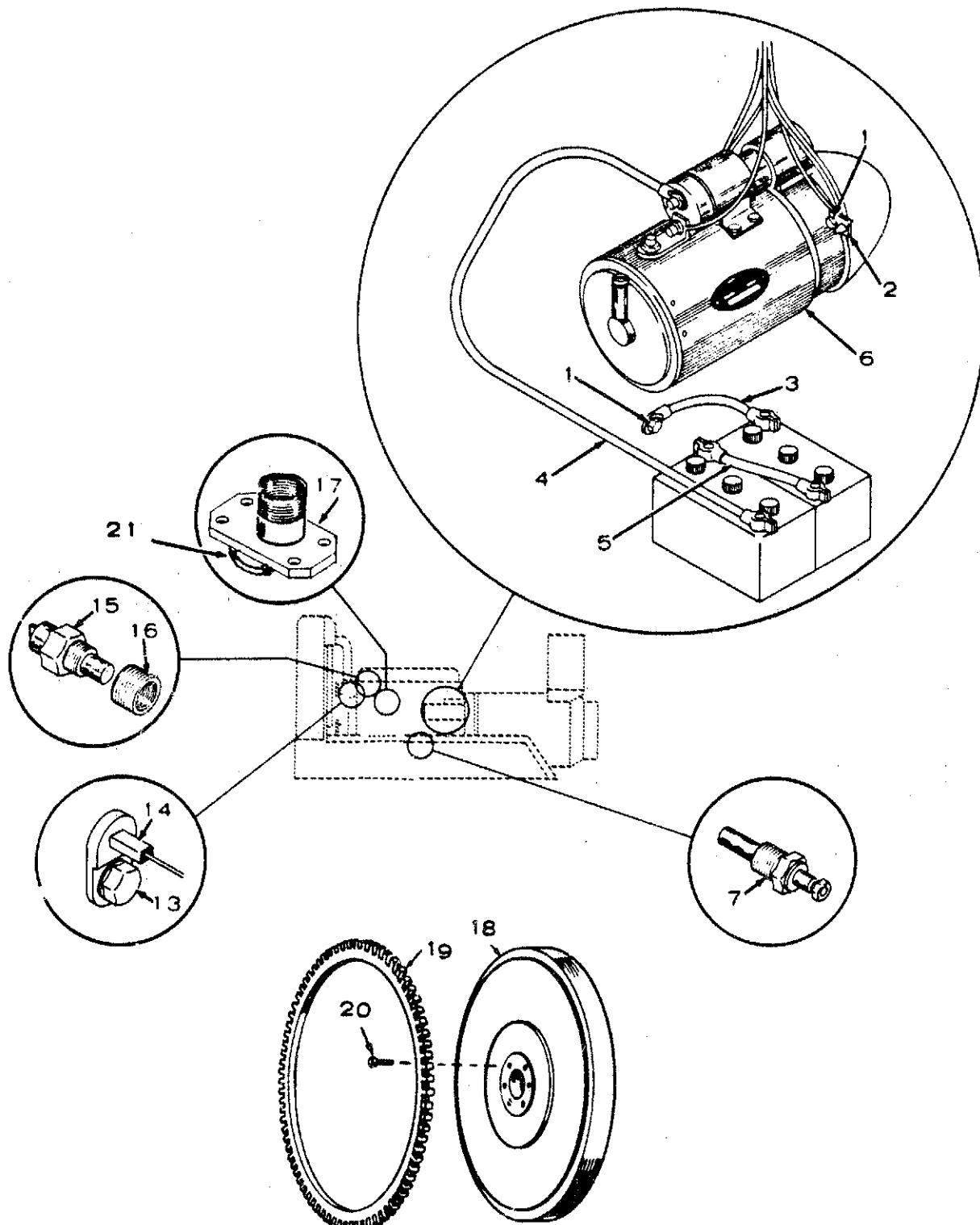
**MISCELLANEOUS ENGINE PARTS —
LEFT SIDE**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	WIRING HARNESS - ENGINE 338-0772	1	Standard	16	309-0169	1	† Switch, Pressure - Oil
		1	Special	17	502-0058	1	† Tee, Pipe (1/8" NPT) - (Used In Some Installations)
2	503-0197	1	Clamp, Hose	18	505-0763	1	† Cross, Pipe (1/8" NPT)
3	503-0888	1	Hose, Rubber (3/4" ID x 1" OD x 17" Lg)	19	505-0098	1	Nipple, Pipe-Close (1/8" NPT x 3/4")
4	505-0185	1	Nipple, Pipe - Half	20	SENDER, WATER TEMPERATURE		
5	504-0011	1	Valve, Cock	193-0104	1	Spec A through B	
6	505-0100	1	Nipple, Pipe - Close (1/2" NPT x 1-1/8")	193-0246	1	Begin Spec C	
7	505-0050	1	Elbow, Pipe - Street, 90 DEG (1/2" NPT)	21	505-0131	1	Bushing, Reducer - Hex (3/4" NPT x 3/8" NPT)
8	503-0197	1	Clamp, Hose	22	309-0179	1	† Switch, Thermostatic - High Coolant Temperature - Shutdown
9	503-0889	1	Hose, Rubber (3/4" ID x 1" OD x 24" Lg)	23	505-0117	1	Bushing, Reducer - Flush, Brass (1/2" NPT x 3/8" NPT)
10	148-0274	2	Bracket, Support - Hose	24	149-1801	1	Clip, Retaining
11	302-0750	1	† Sender, Tachometer	25	149-1754	1	Element - Fuel Filter
12	302-0967	1	† Tang, Tachometer				
13	309-0064	1	† Switch, Pressure - Oil				
14	505-0057	1	Plug, Pipe (1/8" NPT) - (Used When No Oil Switch)				
15	† SENDER, OIL PRESSURE						
	193-0108	1	Spec A through B				
	193-0244	2	Begin Spec C				

* NOTE: For Special Applications Use Standard Wiring Harness
and add electrical leads as required for optional sensors,
switches per Gen Set wiring diagram.

† - Optional items, used with fault lights or gauges on Engine
Control Panel.

**MISCELLANEOUS ENGINE PARTS -
RIGHT SIDE**



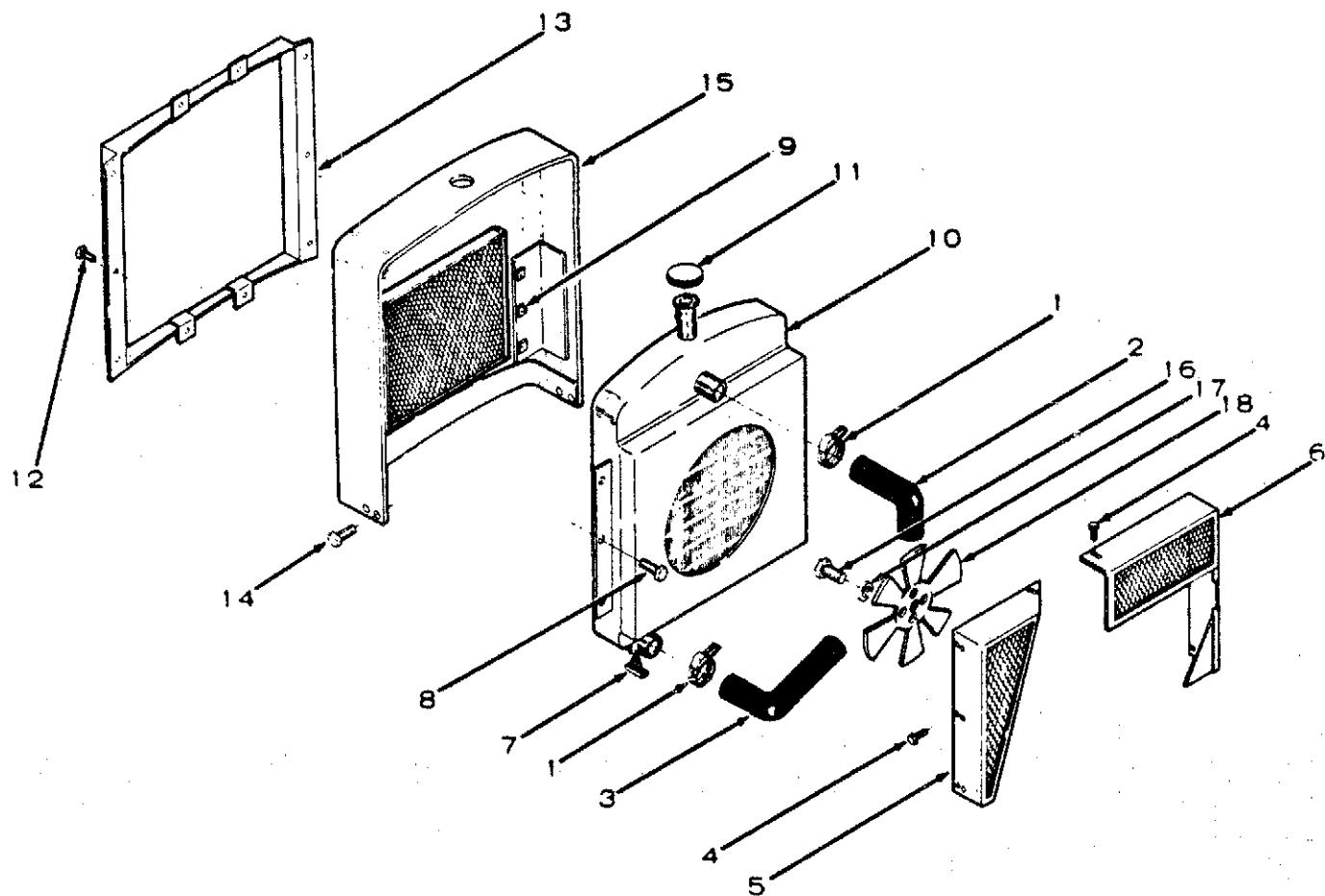
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MISCELLANEOUS ENGINE PARTS — RIGHT SIDE

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1 ATTACHING HARDWARE FOR STARTER & CABLES			
	800-0051	3	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
	850-0050	3	Washer, Lock - Spring (3/8")
	856-0010	1	Washer, Lock - External/Internal Tooth (3/8")
	800-0090	1	Screw, Cap - Hex Head (1/2-13 x 1")
	856-0013	1	Washer, Lock - External/Internal Tooth (1/2")
2	332-1292	1	Terminal Board
3	416-0530	1	Cable, Battery - Negative (16" Lg)
4	416-0531	1	Cable, Battery - Positive (24" Lg)
5	416-0446	1	Cable, Battery - Jumper
6	191-1119	1	Starter, Electrical - 12 Volt
7	193-0249	1	†Sender, Temperature - Oil
13	821-0029	1	Screw, Self-locking - Hex Washer Head (3/8-16 x 3/4")
14	309-0269	1	†Switch, Thermostatic - Low Engine Temperature
15	309-0178	1	†Switch, Thermostatic - High Coolant Temperature - Alarm
16	505-0117	1	†Bushing, Reducer - Flush, Brass (1/2" NPT x 3/8" NPT)
17	155-1330	1	Flange, Exhaust Outlet
18	104-0871	1	Flywheel (Includes Ring Gear) - Spec A Only
19	104-0859	1	Gear, Ring (Spec A Only)
20	800-0094	4	Screw, Cap - Hex Head (1/2-13 x 2" lg) - Spec A Only
21	155-1977	1	Gasket

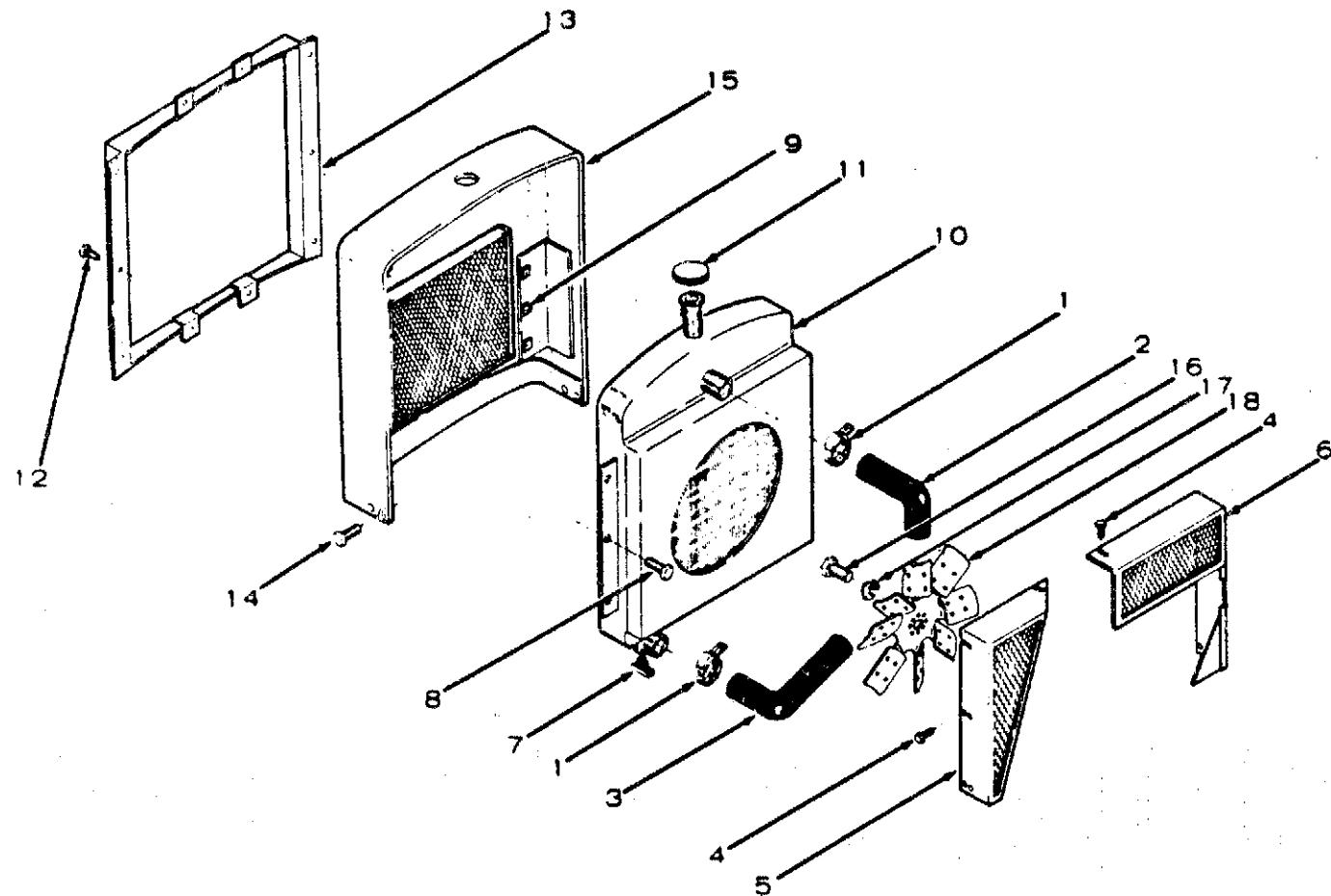
† - Optional Items, used with fault lights or gauges on Engine
Control Panel.

**COOLING SYSTEM
(WITH RADIATOR)
DDB**



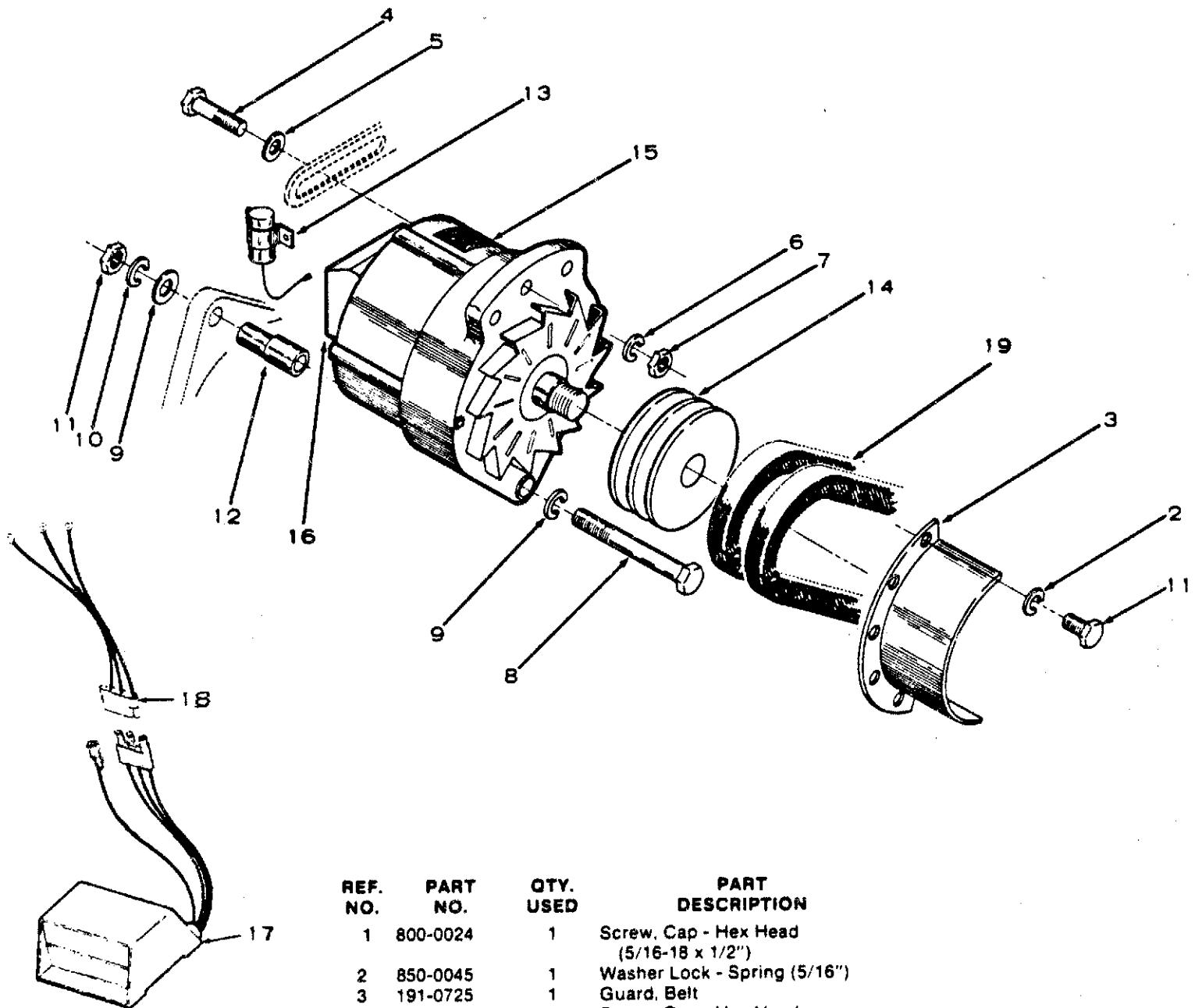
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0365	4	Clamp Hose
2	503-0727	1	Hose, Radiator - Upper
3	503-0635	1	Hose, Radiator - Lower
4	815-0181	8	Screw, Tapping - Hex Head (#10-32 x 1/2")
5	130-0934	1	Guard, Fan - Right Side
6	130-0935	1	Guard, Fan - Left Side
7	504-0028	1	Cock, Drain
8	821-0014	6	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
9	870-0113	6	Nut, Hex with Retaining Clip (5/16-18)
10	130-0713	1	Radiator (Includes Cap)
11	130-0449	1	Cap, Pressure
12	815-0181	10	Screw, Tapping - Hex Head (#10-32 x 1/2")
13	405-1054	1	Flange, Air Duct
14	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
15	405-1811	1	Panel, Front
16	800-0050	4	Screw, Cap - Hex Head (3/8-16 x 1" Lg)
17	850-0050	4	Washer, Lock - Spring (3/8")
18	130-0938	1	Fan, Cooling - Engine

**COOLING SYSTEM
(WITH RADIATOR)
LDDB**



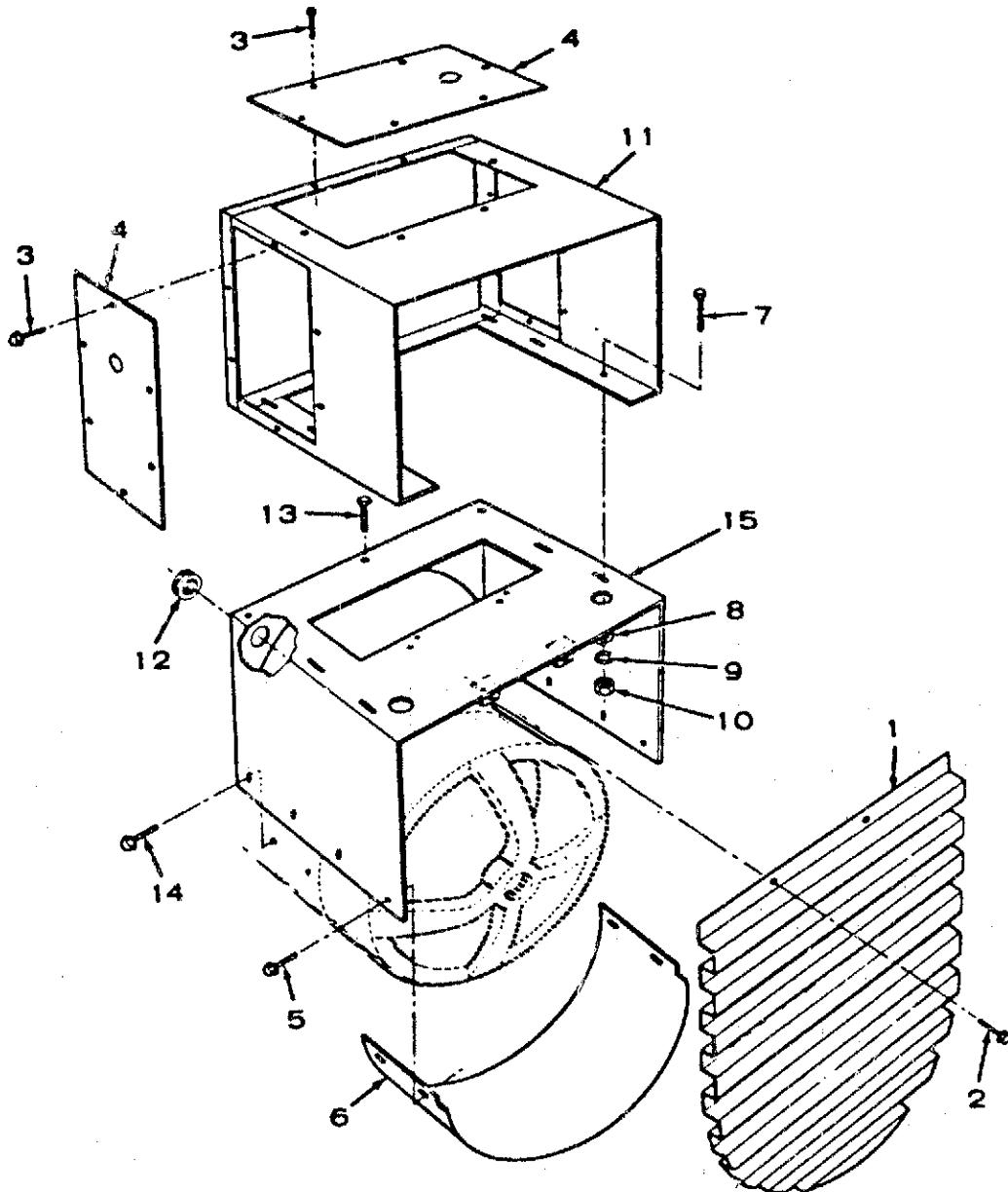
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	603-0365	4	Clamp Hose
2	503-0727	1	Hose; Radiator - Upper
3	503-0635	1	Hose, Radiator - Lower
4	815-0181	8	Screw, Tapping - Hex Head (#10-32 x 1/2")
5	130-0934	1	Guard, Fan - Right Side
6	130-0935	1	Guard, Fan - Left Side
7	504-0028	1	Cock, Drain
8	821-0014	6	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
9	870-0113	6	Nut, Hex with Retaining Clip (5/16-18)
10	130-1255	1	Radiator (Includes Cap)
11	130-0449	1	Cap, Pressure
12	815-0181	10	Screw, Tapping - Hex Head (#10-32 x 1/2")
13	405-1054	1	Flange, Air Duct
14	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
15	405-1811	1	Panel, Front
16	800-0050	4	Screw, Cap - Hex Head (3/8-16 x 1" Lg)
17	850-0050	4	Washer, Lock - Spring (3/8")
18	130-2234	1	Fan, Cooling - Engine

ALTERNATOR



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0024	1	Screw, Cap - Hex Head (5/16-18 x 1/2")
2	850-0045	1	Washer Lock - Spring (5/16")
3	191-0725	1	Guard, Belt
4	800-0030	1	Screw, Cap - Hex Head (5/16-18 x 1-1/4")
5	526-0115	2	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
6	850-0045	1	Washer, Lock - Spring (5/16")
7	862-0015	1	Nut, Hex (5/16-18)
8	800-0058	1	Screw, Cap - Hex Head (3/8-16 x 3")
9	526-0035	2	Washer, Flat (17/32" ID x 7/8" OD x 1/8" Thk)
10	850-0050	1	Washer, Lock - Spring (3/8")
11	862-0003	1	Nut, Hex (3/8-16)
12	232-2183	1	Spacer, Stepped
13	312-0201	1	Capacitor
14	191-1098	1	Pulley
15	ALTERNATOR - 12 VDC 191-1388 191-1257	1	Standard (Includes Regulator)
16	191-1390	1	Marine Type - Optional
17	191-0548	1	Regulator, Voltage (Part of 191-1388 Alternator)
18	191-0681	1	Regulator, Voltage (Used with 191-1257 Alternator)
19	511-0136	2	Cable, Electrical (Alternator to Regulator)
			Belt, Drive

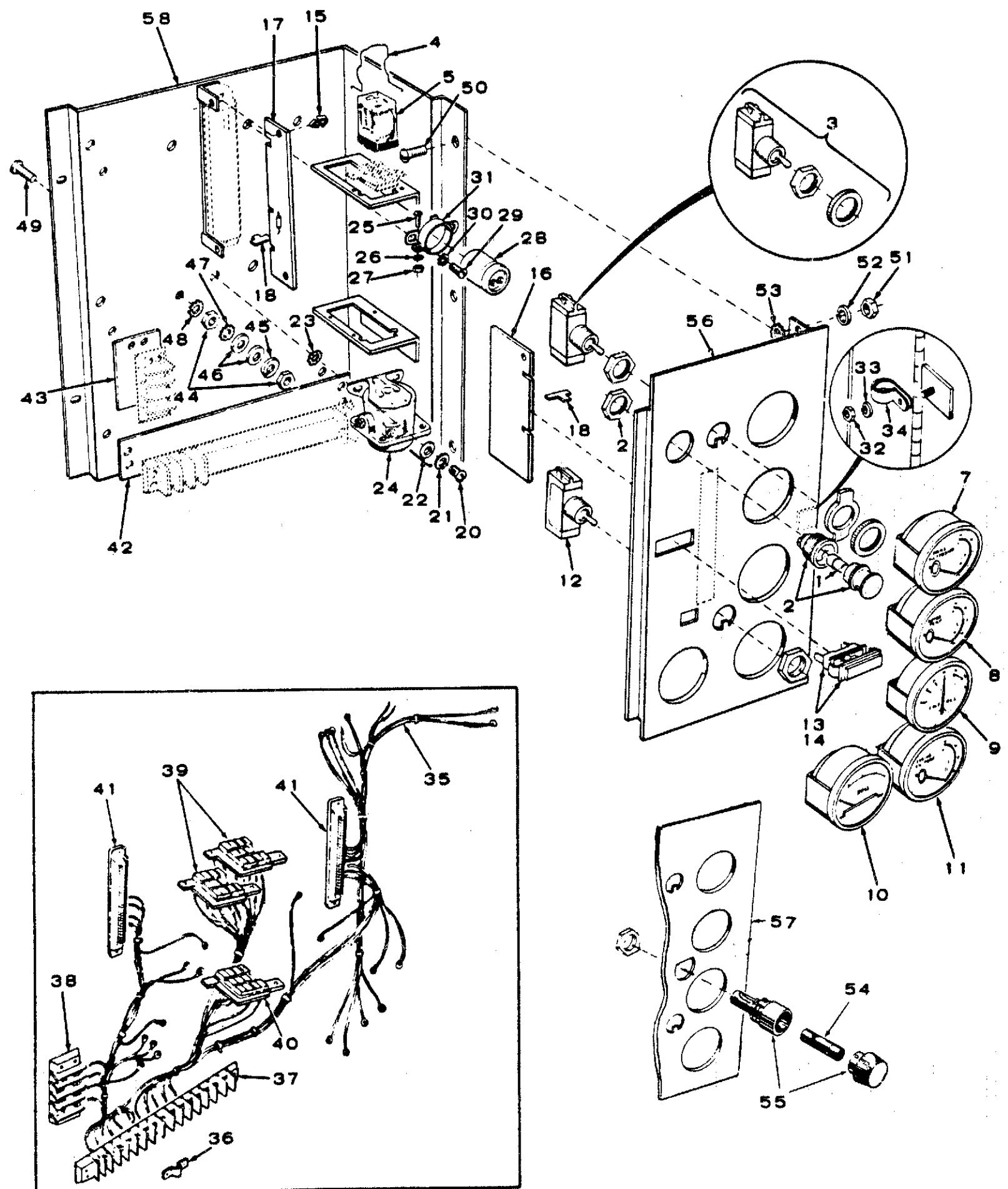
CONTROL HOUSING



M-1180

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	821-0010	8	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")	8	856-0006	1	Washer, Lock - EIT (1/4")
2	234-0370	1	Grill, Air - Generator Inlet	9	526-0018	5	Washer, Flat (17/64" ID x 5/8" OD x 1/16" Thk)
3	815-0350	18	Screw, Tapping - Hex Washer Head (#10-32 x 3/8")	10	870-0212	6	Nut, Hex (1/4-20)
4	301-3156	3	Panel, Access	11	301-3155	1	Housing, Control Box
5	821-0010	4	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")	12	508-0203	1	Bushing, Cable - Nylon
6	234-0361	1	Wrapper, End Bell	13	821-0010	1	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
7	821-0018	6	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")	14	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
				15	301-3154	1	Saddle, Control Box

ENGINE CONTROL WITH ONE FAULT LIGHT



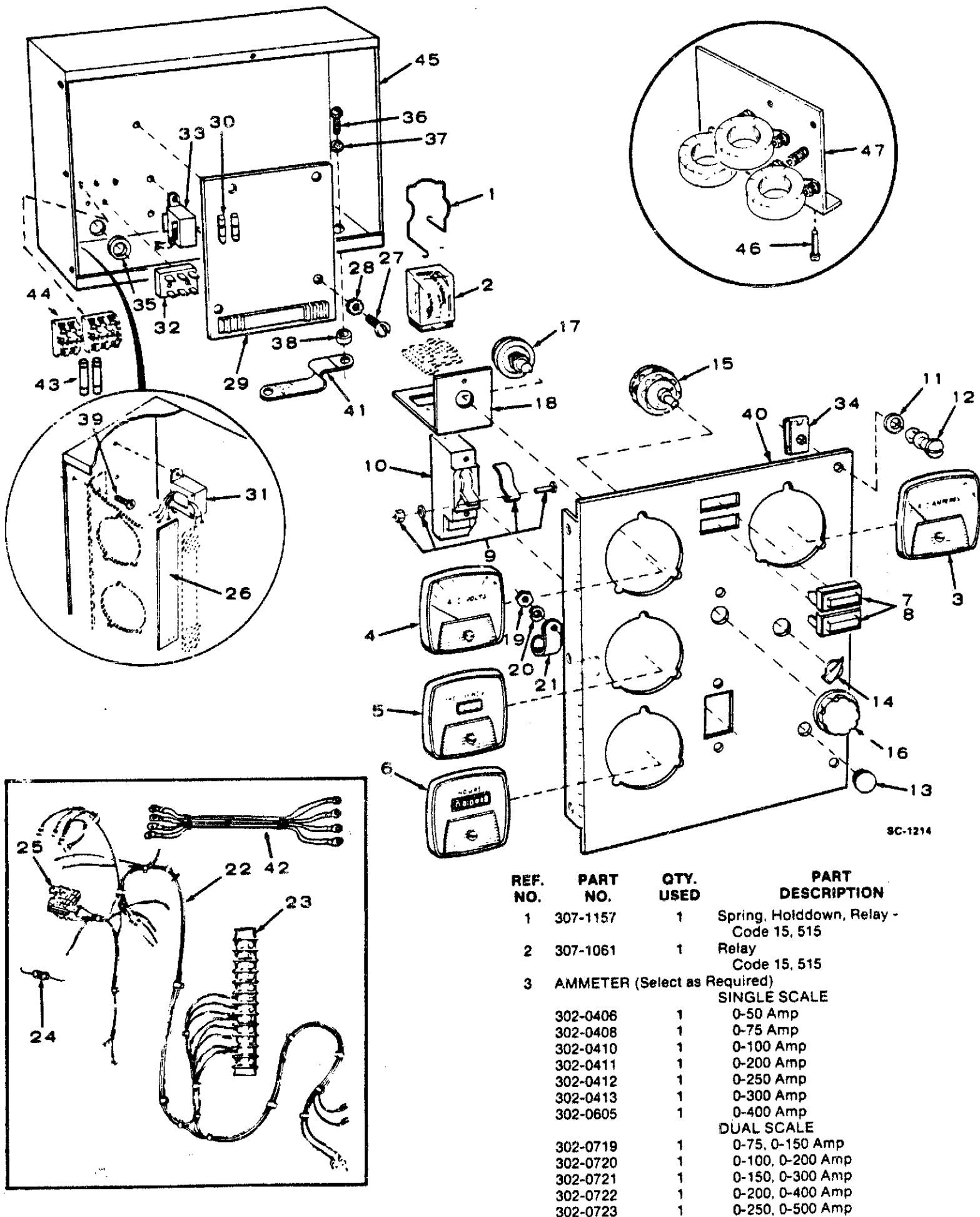
ENGINE CONTROL WITH ONE FAULT LIGHT

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	322-0004	1	Lamp Incandescent (12 VDC)	35	HARNESS, WIRING - ENGINE CONTROL		
2	322-0149	1	Lampholder	338-1065		1	Includes Parts Marked +
3	308-0002	1	Switch, Toggle (SPST)	338-1122		1	£ Includes Parts Marked +
4	307-1157	3	Spring, Holdown - Relay				ATTACHING HARDWARE FOR WIRING HARNESS
5	RELAY (12 VDC)			812-0061		4	Screw, Machine - Round Head (#6-32 x 3/8")
	307-1058	1	(Ignition)	812-0066		6	Screw, Machine - Round Head (#6-32 x 3/4")
	307-1058	1	(Start Disconnect)	853-0003		14	Washer, Lock - ET (#6)
	307-1061	1	(Starter Protection)	860-0006		10	Nut, Hex (#6-32)
7	193-0243	1	Gauge - Oil Pressure (12 VDC)	36	332-1043	1	+ Jumper, Terminal
8	193-0245	1	Gauge - Water Temperature (12 VDC)	37	332-0795	1	+ Block, Terminal - 16 Place
9	302-0061	1	Ammeter	38	332-0537	1	+ Block, Terminal - 4 Place
10	302-0749	1	† Tachometer - Electrical	39	323-0765	2	+ Socket, Relay - 11 Place
11	193-0248	1	† Gauge - Oil Temperature (12 VDC)	40	323-0764	1	+ Socket, Relay - 8 Place
12	SWITCH, TOGGLE - SELECTOR			41	332-1271	2	+ Connector, Electrical - PC BD
	308-0138	1	Standard & Cycle Cranking Controls	42	332-1241	1	Strip, Marker - Terminal
	308-0327	1	Penn State Controls	43	332-1239	1	Strip, Marker - Terminal
13	*LIGHT, INDICATOR (Lens Color & Legend Listed Below)						GROUND TERMINAL ASSEMBLY (Includes parts marked #)
	322-0128	1	Red - Fault - 14 VDC	44	871-0010	2	#Nut, Hex - Brass (#10-32)
14	322-0136	1	*Light, Indicator - 14 VDC (Red Lens - No Legend)	45	850-0030	1	#Washer, Lock - Spring (#10)
15	518-0374	4	Fastener, Snap-In (Printed Circuit Boards)	46	526-0062	2	#Washer, Flat - Brass (13/64" ID x 1/2" OD x 1/16" Thk)
16	PRINTED CIRCUIT BOARD ASSEMBLY			47	853-0008	1	#Washer, Lock - ET (#10)
	300-0733	1	Standard Cranker (12 VDC)	48	856-0003	1	#Washer, Lock - EIT (#10)
	300-0714	1	Cycle Cranker (12 VDC)	49	815-0203	1	#Screw, Machine - Round Head, Brass (#10-32 x 7/8")
17	PRINTED CIRCUIT BOARD ASSEMBLY			50	815-0026	5	Screw, Machine - Truss Head (#10-32 x 3/8")
	300-0679	1	Engine Control Monitor - Standard	51	870-0053	1	Nut, Hex (#10-32)
	300-0730	1	Engine Control Monitor - Penn State	52	850-0030	1	Washer, Lock - Spring (#10)
18	332-1276	4	Plug, Keying - PC Board	53	856-0003	1	Washer, Lock - EIT (#10)
20	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")	54	321-0181	1	£ Fuse (5 Amp)
21	850-0030	2	Washer, Lock - Spring (#10)	55	321-0217	1	£ Fuseholder
22	526-0009	2	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)	56	PANEL, CONTROL - ENGINE		
23	856-0003	2	Washer, Lock - EIT (#10)	301-3165		1	With Three Gauge Mtg. Holes
24	307-1031	1	Relay, Solenoid - Start (12 VDC)	301-3286		1	With Four Gauge Mtg. Holes
25	812-0061	1	Screw, Machine - Round Head (#6-32 x 3/8")	301-3396		1	With Five Gauge Mtg. Holes
26	860-0006	1	Nut, Hex (#6-32)	57	£ PANEL, CONTROL - ENGINE		
27	853-0003	1	Washer, Lock - ET (#6)	301-4572		1	With Three Gauge Mtg. Holes
28	356-0072	1	Capacitor, Fixed Electrolytic (4000 MFD, 30 VDC)			1	With Four Gauge Mtg. Holes
29	812-0063	2	Screw, Machine - Round Head (#6-32 x 1/2")			1	With Five Gauge Mtg. Holes
30	853-0003	2	Washer, Lock - ET (#6)	58	301-3253	1	Bracket, Mounting - Engine Control
31	356-0070	1	Clamp, Capacitor Mounting				
32	870-0053	1	Nut, Hex (#10-32)				
33	850-0030	1	Washer, Lock - Spring (#10)				
34	332-0051	1	Clamp, Loop				

- - NOTE: For lamp replacement order 322-0136
Remove and discard plain red lens, install lens with legend from burned out light - lights snap in and out of panel.
- † - Optional items used with Engine Mounted Senders.
- † - Parts included in Wiring Harness
- # - Parts included in Ground Terminal Assembly
- £ - Parts Used on Hi Ambient Temp (L) Type GenSets.



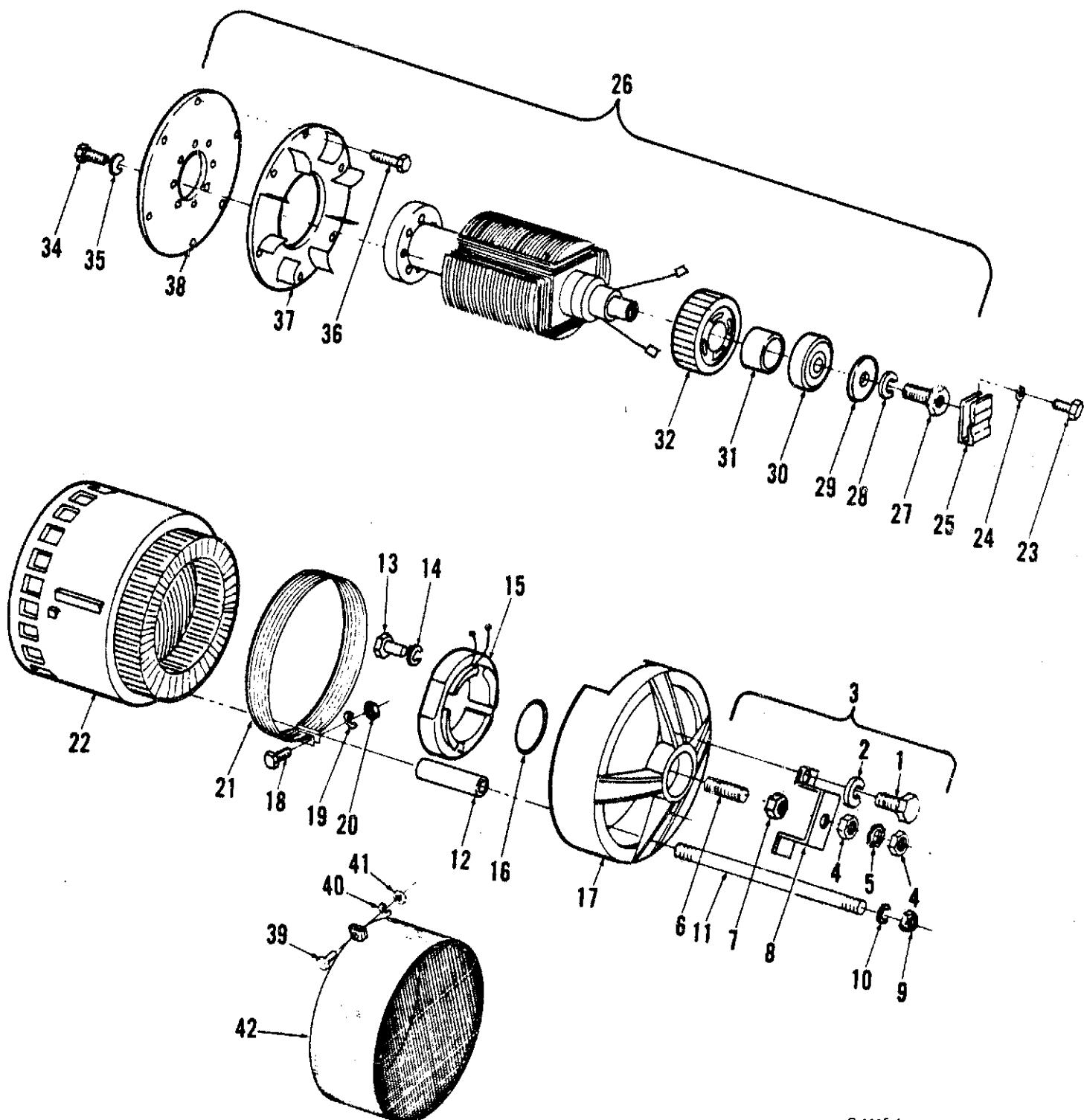
GENERATOR CONTROL



GENERATOR CONTROL

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
4	VOLTMETER (Select as Required)		SINGLE SCALE	23	BLOCK, TERMINAL (Select as Required)		
	302-0421	1	0-300 Volt	332-0607		1	12 Place
	302-0422	1	0-600 Volt	332-0795		1	16 Place
	302-0612	1	0-500 Volt	24	350-0556	1	Resistor, Fixed, Composition (47K Ohms, 1/2 Watt) - Code 15, 515
	302-0779	1	0-750 Volt	25	323-0765	1	Socket, Relay - 11 Place - Code 15, 515
	302-0718	1	DUAL SCALE 0-300, 0-600 Volt	26	STRIP, MARKER (Select as Required)		
5	METER, FREQUENCY (Select as Required)		REED TYPE	332-1242		1	16 Place
	302-0213	1	115 VAC, 60 Hz	332-1248		1	12 Place
	302-0221	1	230 VAC, 60 Hz	27	812-0065	4	Screw, Machine - Round Head (#6-32 x 5/8")
	302-0234	1	115 VAC, 50 Hz	28	853-0003	4	Washer, Lock - ET (#6)
	302-0256	1	230 VAC, 50 Hz	29	332-1956	1	Regulator, Voltage
	302-0809	1	POINTER TYPE 120 VAC, 60 Hz	30	321-0204	2	Fuse, Cartridge(1/4 Amp)
	302-0810	1	208 VAC, 60 Hz	31	315-0431	1	Transformer, Voltage
	302-0811	1	240 VAC, 60 Hz				ATTACHING PARTS FOR TRANSFORMER
6	METER, TIME TOTALIZING (Select as Required)			812-0061		2	Screw, Machine - Round Head (#6-32 x 3/8")
	302-0466	1	60 Hz	853-0003		2	Washer, Lock - ET (#6)
	302-0469	1	50 Hz	32	305-0675	1	Rectifier, Bridge
7	LIGHT, INDICATOR - 125 VAC (Lens Color & Legend Listed Below)						ATTACHING PARTS FOR RECTIFIER
	322-0130	1	Red - Lower Scale	812-0070		2	Screw, Machine - Round Head (#6-32 x 1-1/4")
	322-0131	1	Red - Upper Scale	850-0020		2	Washer, Lock - Spring (#6)
8	322-0178	1	Light, Indicator - 125 VAC (Replacement) - Discard	33	315-0384	1	Reactor
			Lens - Used Lens from Original Light				ATTACHING PARTS FOR REACTOR
9	320-0307	1	Lock - Circuit Breaker Handle (Penn State Sets)	812-0061		2	Screw, Machine - Round Head (#6-32 x 3/8")
			ATTACHING HARDWARE FOR LOCK	853-0003		2	Washer, Lock - ET (#6)
	815-0203	1	Screw, Machine - Round Head (#10-32 x 7/8")	34	406-0332	2	Receptacle, Turnbutton Fastener
	854-0010	1	Washer, Lock - IT (#10)	35	508-0001	4	Grommet, Rubber
	871-0010	1	Nut, Hex (#10-32)	36	800-0045	4	Screw, Cap - Hex Head (5/16-18 x 3/8")
10	320-0431	1	Circuit Breaker	37	850-0045	4	Washer, Lock - Spring (5/16")
			ATTACHING HARDWARE FOR CIRCUIT BREAKER	38	402-0070	4	Dampener, Vibration
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")	39	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/8")
	850-0020	2	Washer, Lock - Spring (#6)	40	PANEL CONTROL		Sets Without Meter Panel
	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")	301-3822		1	Code 3
	871-0010	1	Nut, Hex - Brass (#10-32)	301-3821		1	Code 6D, 7, 9X
	853-0008	1	Washer, Lock - ET (#10)	301-3274		1	Code 15, 515
	526-0049	1	Washer, Flat - Brass (13/64" ID x 7/16" OD x 132" Thk)				Sets With Meter Panel
11	406-0334	2	Clip, Retaining - Turnbutton Fastener	301-3169		1	Code 3
12	406-0333	2	Stud, Turnbutton Fastener	301-3342		1	Code 6D, 7, 9X
13	517-0131	1	Plug, Plastic	301-3170		1	Code 15, 515
14	303-0076	1	Knob, Pointer	41	337-0049	1	Strap, Ground
15	308-0284	1	Switch, Selector				ATTACHING PARTS FOR STRAP
16	303-0032	1	Knob	800-0045		1	Screw, Cap - Hex Head (5/16-18 x 3/8")
17	303-0170	1	Rheostat (35K Ohms, 25 Watt)	850-0045		1	Washer, Lock - Spring (5/16")
18	301-3244	1	Bracket, Mounting, Relay - Code 15, 515	856-0008		2	Washer, Lock - EIT (5/16")
19	870-0053	1	Nut, Hex (#10-32)	862-0015		1	Nut, Hex (5/16-18)
20	850-0030	1	Washer, Lock - Spring (#10)	42	338-1104	1	£Wiring Harness - Fuse Blocks to Terminal Board
21	332-0051	1	Clamp, Loop	43	321-0223	4	£Fuse, Cartridge (15 Amp)
22	HARNESS, WIRING - GENERATOR CONTROL			44	£FUSE BLOCK		
			Sets Without Meter Panel	321-0176		1	Two Place
	338-0765	1	Code 3	321-0177		1	Three Place
	338-0764	1	Code 15, 515				
	338-0766	1	Code 6D, 7, 9X	45	BOX, CONTROL		
			Sets With Meter Panel	301-3158		1	Used on Sets Without Fuse Blocks
	338-0735	1	Code 3	301-4586		1	£Used on Sets With Fuse Blocks
	338-0730	1	Code 15, 515	46	821-0010	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
	338-0759	1	Code 6D, 7, 9X	47	CURRENT TRANSFORMER ASSEMBLY (See Separate Figure For Parts) - NOTE: Assembly is Located Behind the Control Box.		
			ATTACHING HARDWARE FOR WIRING HARNESS				
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")				
	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")				
	850-0020	2	Washer, Lock - Spring (#6)				
	853-0003	4	Washer, Lock - ET (#6)				
	853-0006	2	Nut, Hex (#6-32)				
				£ - Parts Used on Hi Ambient Temp (L) Type GenSets.			

**GENERATOR ASSEMBLY - BRUSHLESS TYPE
USED WITH REMOTE VOLTAGE REGULATOR**



G 1115-1

GENERATOR ASSEMBLY - BRUSHLESS TYPE USED WITH REMOTE VOLTAGE REGULATOR

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")	26	ROTOR ASSEMBLY, GENERATOR (Includes Parts Marked *) 50 HERTZ SETS		
2	850-0040	2	Washer, Lock - Spring (1/4")	201-2669		1	Code 515
3	150-1456	1	Contact Assembly - Overspeed Switch (Includes Parts Marked +)	201-2671		1	‡ Code 515 (Extended Stack) 60 HERTZ SETS
4	862-0001	2	+Nut, Hex (1/4-20)	201-2671		1	Code 3
5	853-0013	1	+Washer, Lock - ET (1/4")	201-2689		1	‡ Code 3 (Environmental Protected)
6	150-0723	1	+Contact, Electrical				
7	870-0250	1	+Nut, Insulated	201-2669		1	Codes 6D, 7, 9X, 15
8	150-1356	1	+Bracket, Mounting - Contact	201-2671		1	‡ Code 15 (Extended Stack)
9	862-0011	4	Nut, Hex - Grade 8 (3/8-16)	201-2687		1	£ Code 15 (Environmental Protected)
10	850-0050	4	Washer, Lock - Spring (3/8")	201-2689		1	‡£ Code 15 (Extended Stack and Environmental Protected)
11	STUD (Select As Required)			27	800-0513	1	*Screw, Cap - Hex Head Modified with 3/8-16 Tapped Center Hole (3/4-10 x 1-1/2")
	520-0721	4	3/8-16 UNC x 16-11/32" Lg	28	850-0079	1	*Washer, Lock - Spring (3/4")
	520-0723	4	3/8-16 UNC x 17-15/16" Lg	29	526-0238	1	*Washer, Flat - Steel Alloy (13/16" ID x 2" OD x 3/16" Thk)
12	503-0611	4	Hose, Rubber	30	510-0101	1	*Bearing, Ball
13	800-0009	4	Screw, Cap - Hex Head (1/4-20 x 1-1/2")	31	232-2102	1	*Spacer, Sleeve
14	850-0040	4	Washer, Lock - Spring (1/4")	32	*ROTOR ASSEMBLY, EXCITER (See Separate Group for Components)		
15	STATOR, EXCITER (Select As Required)			201-1739		1	Standard
	220-2353	1	Standard	201-1845		1	£Environmental Protected
	220-1774	1	£Environmental Protected	33	515-0145	1	*Key, Machine (1/4" x 1/4" x 7/8")
16	509-0125	1	Seal, Oil - "O" Ring	34	*BOLT, PLACE - HEX HEAD, GRADE 8 (Select As Required)		
17	211-0185	1	End Bell, Generator	805-0033	8	5/8-11 x 1"	
18	800-0008	2	Screw, Cap - Hex Head (1/4-20 x 1-1/4")	805-0035	8	5/8-11 x 1-1/2"	
19	850-0040	2	Washer, Lock - Spring (1/4")	35	526-0259	8	*Washer, Flat - Hardened Steel (11/16" ID x 1-3/8" OD x 7/64" Thk)
20	862-0001	2	Nut, Hex (1/4-20)	36	*BOLT, PLACE - HEX HEAD, GRADE 8 (Select As Required)		
21	234-0368	1	Screen, Air - Generator	805-0018	8	3/8-16 x 1"	
22	STATOR ASSEMBLY, GENERATOR			805-0019	8	3/8-16 x 1-1/4"	
	50 HERTZ SETS			37	205-0089	1	*Fan, Generator
	220-1997	1	Code 515	38	232-2078	1	*Disk, Drive - Generator
	220-1999	1	‡ Code 515 (Extended Stack)	39	800-0008	1	Screw, Cap - Hex Head (1/4-20 x 1-1/4")
	60 HERTZ SETS			40	850-0040	1	Washer, Lock - Spring (1/4")
	220-1554	1	Code 3	41	862-0001	1	Nut, Hex (1/4-20)
	220-1847	1	£ Code 3 (Environmental Protected)	42	234-0369	1	Cover, End Bell (Used on Housed Sets Only)
	220-2624	1	Code 6D				
	220-2462	1	Code 7				
	220-1602	1	Code 9X				
	220-1454	1	Code 15				
	220-1456	1	‡ Code 15 (Extended Stack)				
	220-1786	1	£ Code 15 (Environmental Protected)				
	220-1788	1	‡£ Code 15 (Extended Stack and Environmental Protected)				
23	800-0048	1	Screw, Cap - Hex Head (3/8-16 x 3/4")				
24	856-0010	1	Washer, Lock - EIT (3/8")				
25	150-0717	1	Switch, Overspeed				

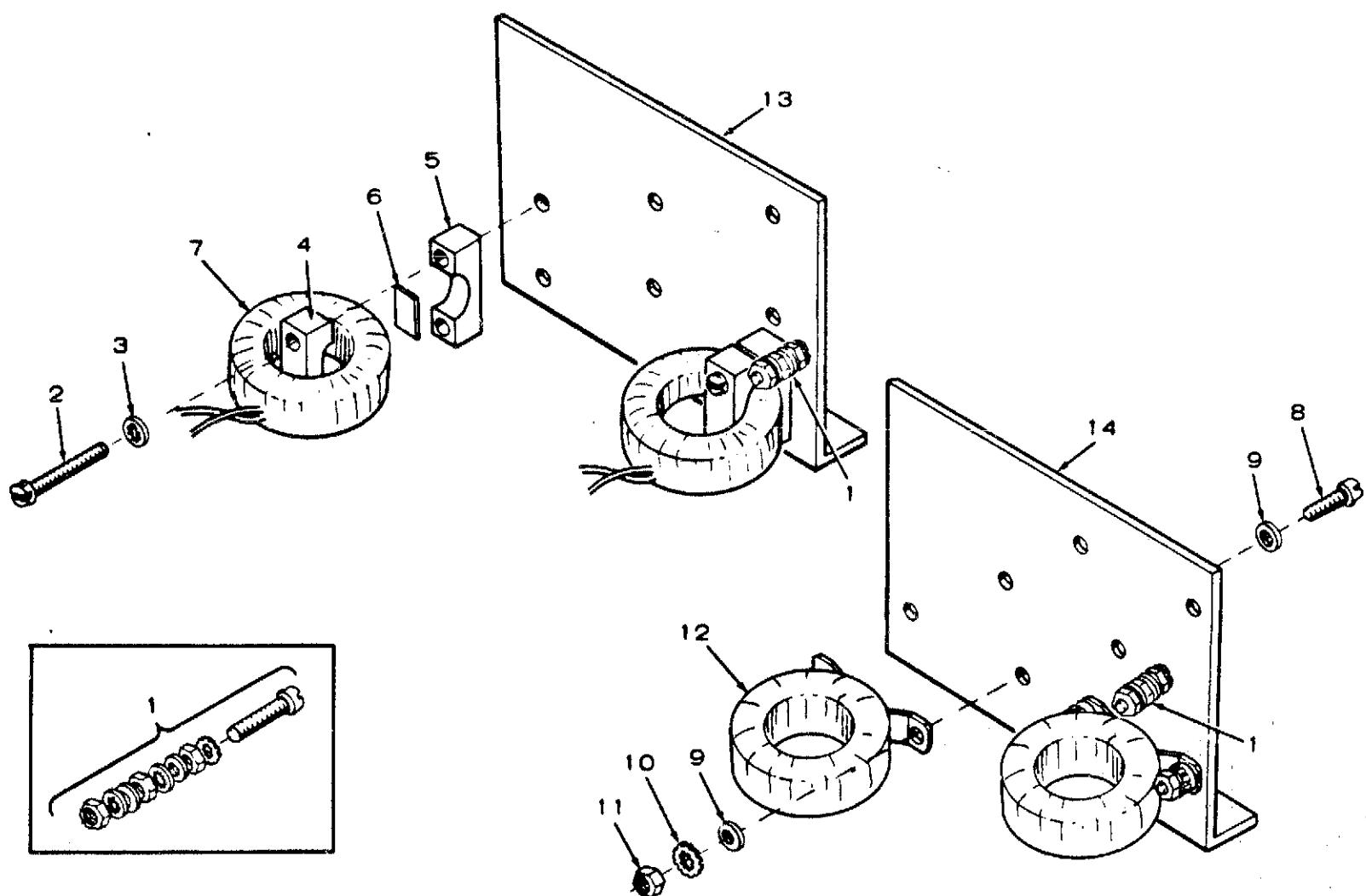
+ - Parts Included in Overspeed Switch Assembly.

* - Parts Included in Generator Rotor Assembly.

‡ - Extended Stack type assemblies that are used on sets having full power output on both single and three phase hookups. Both phases carry same kW and kVA ratings.

£ - Environmental protected assemblies or parts which are coated with epoxies and are for use in high humidity areas.

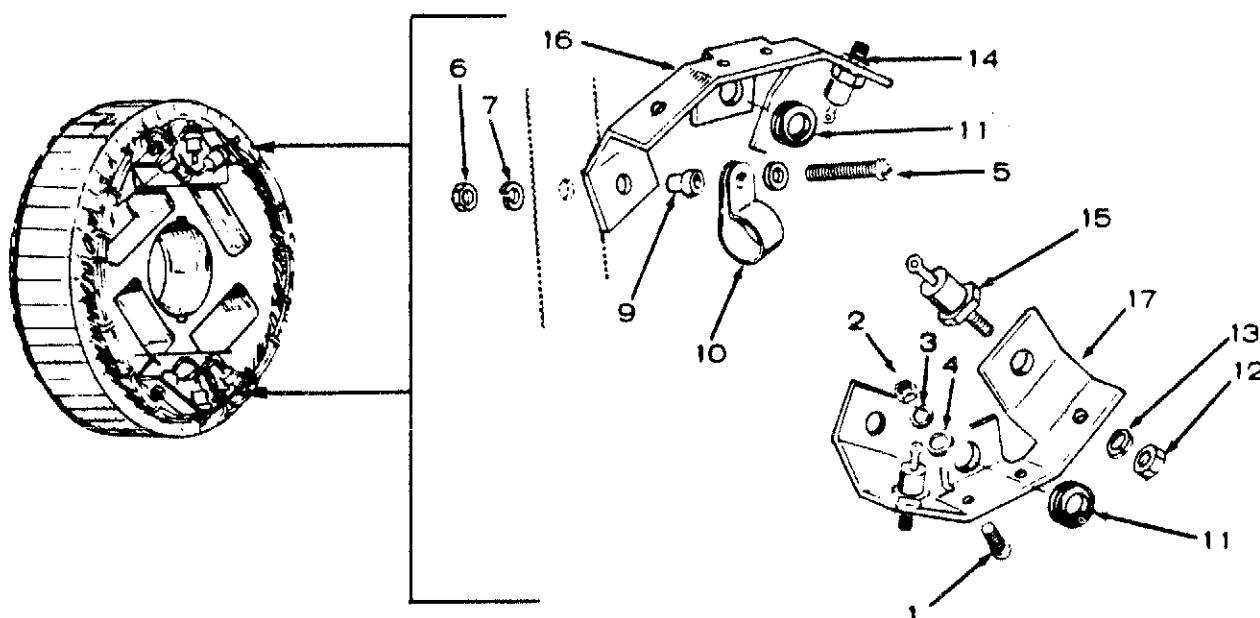
CURRENT TRANSFORMER ASSEMBLY



SC-1150

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	
CURRENT TRANSFORMER ASSEMBLY (Select Components as Required)								
1 GROUND TERMINAL ASSEMBLY (Includes Following Items)								
1	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")	7	302-0117	3	Ratio 50/5, 3 VA	
	871-0010	3	Nut, Hex - Brass (#10-32)		302-0076	3	Ratio 75/5, 2 VA	
	856-0003	1	Washer, Lock - EIT (#10)		302-0078	3	Ratio 100/5, 2 VA	
	854-0010	2	Washer, Lock - IT (#10)		302-0079	3	Ratio 150/5, 1 VA	
	526-0049	2	Washer, Flat - Brass (13/64" ID x 7/32" OD x 1/32" Thk)		302-0106	3	Ratio 200/5, 1 VA	
2	813-0110	6	Screw, Machine - Round Head (#10-32 x 2")		302-0209	3	Ratio 230/5, 1 VA	
3	854-0010	6	Washer, Lock - IT (#10)		302-0107	3	Ratio 300/5, 1 VA	
4	302-0235	3	Clamp, Upper	8	813-0100	6	Screw, Machine - Round Head (#10-32 x 1/2")	
5	302-0236	3	Clamp, Lower		9	526-0008	6	Washer, Flat (13/64" ID x 7/16" OD x 1/32" Thk)
6	302-0253	6	Shim		10	856-0003	6	Washer, Lock - EIT (#10)
					11	870-0053	6	Nut, Hex (#10-32)
12 CURRENT TRANSFORMER (Select Size as Required)								
				12	302-0952	3	Ratio 75/5, 2 VA	
					302-0864	3	Ratio 150/5, 2 VA	
					302-0865	3	Ratio 200/5, 2 VA	
					302-0866	3	Ratio 250/5, 2 VA	
					302-0608	3	Ratio 400/5, 2 VA	
					302-0547	3	Ratio 500/5, 2 VA	
					302-0471	3	Ratio 750/5, 2 VA	
				13	302-0729	1	Bracket, Mounting - Transformer	
				14	302-0764	1	Bracket, Mounting - Transformer	

EXCITER ROTOR

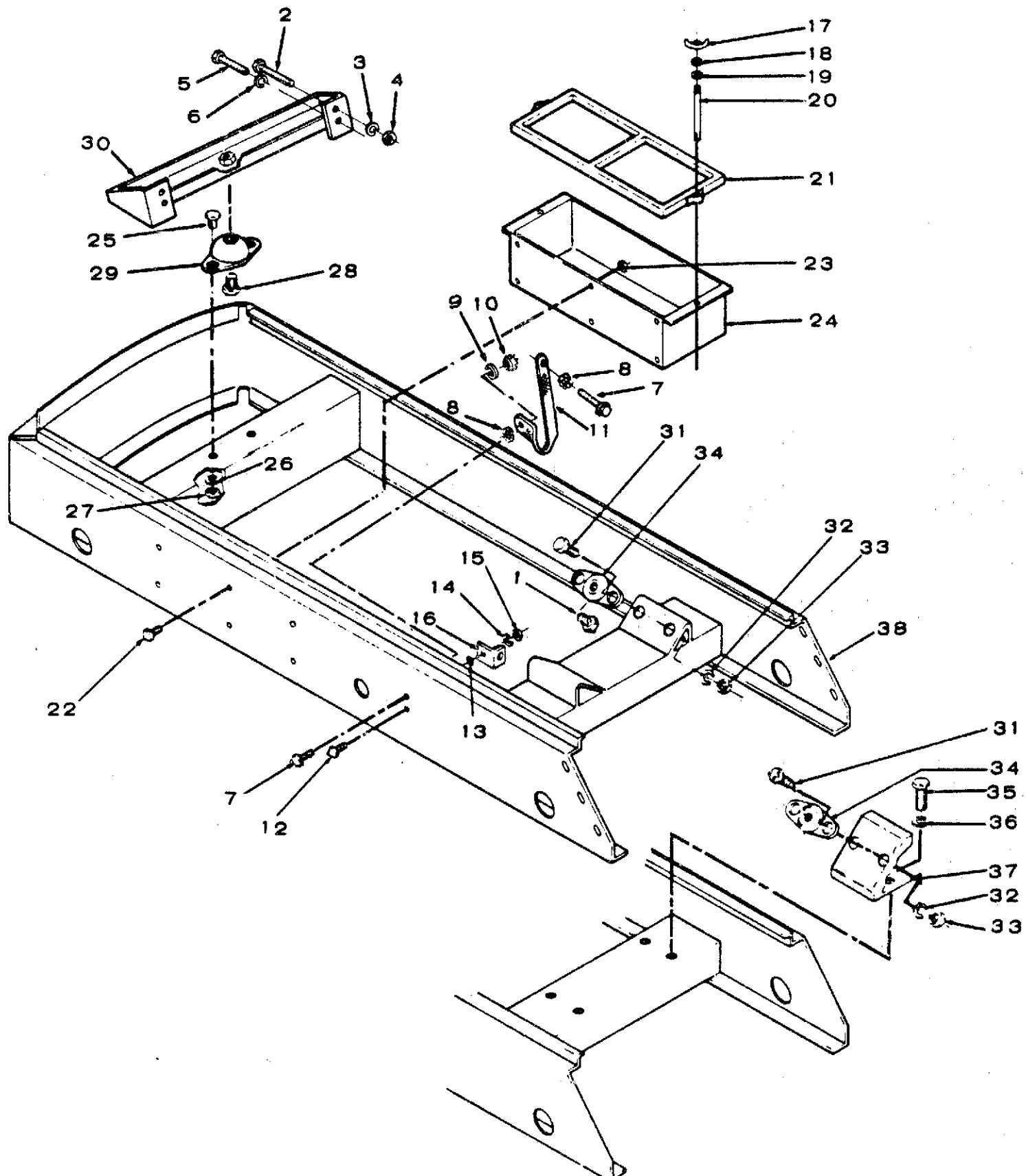


G-1030

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ROTOR ASSEMBLY, EXCITER (Includes Parts Marked *)			
	201-1739	1	Standard
	201-1845	1	Environmental Protected (Expoxyed)
1	813-0100	2	Screw, Machine - Round Head (#10-32 x 1/2")
2	870-0053	2	Nut, Hex (#10-32)
3	850-0030	2	Washer, Lock - Spring (#10)
4	526-0008	2	Washer, Flat (13/64" ID x 7/16" OD x 1/32" Thk)
5	813-0110	4	*Screw, Machine - Round Head (#10-32 x 2")
6	870-0053	4	*Nut, Hex (#10-32)
7	850-0030	4	*Washer, Lock - Spring (#10)
8	526-0009	4	*Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)
9	508-0187	4	*Spacer, Stepped
10	332-0050	2	*Clamp, Loop
11	508-0093	2	*Grommet, Rubber
12	870-0053	6	*Nut, Hex (#10-32)
13	850-0030	6	*Washer, Lock - Spring (#10)
14	*DIODE, RECTIFIER - POSITIVE (CR1, CR2, CR3)		
	358-0016	3	Standard
	358-0044	3	Environmental Protected (Expoxyed)
15	*DIODE, RECTIFIER - NEGATIVE (CR4, CR5, CR6)		
	358-0015	3	Standard
	358-0043	3	Environmental Protected (Expoxyed)
16	363-0054	1	*Heat, Sink - Positive Diodes
17	363-0055	1	*Heat, Sink - Negative Diodes

* - Parts included in Exciter Rotor Assembly

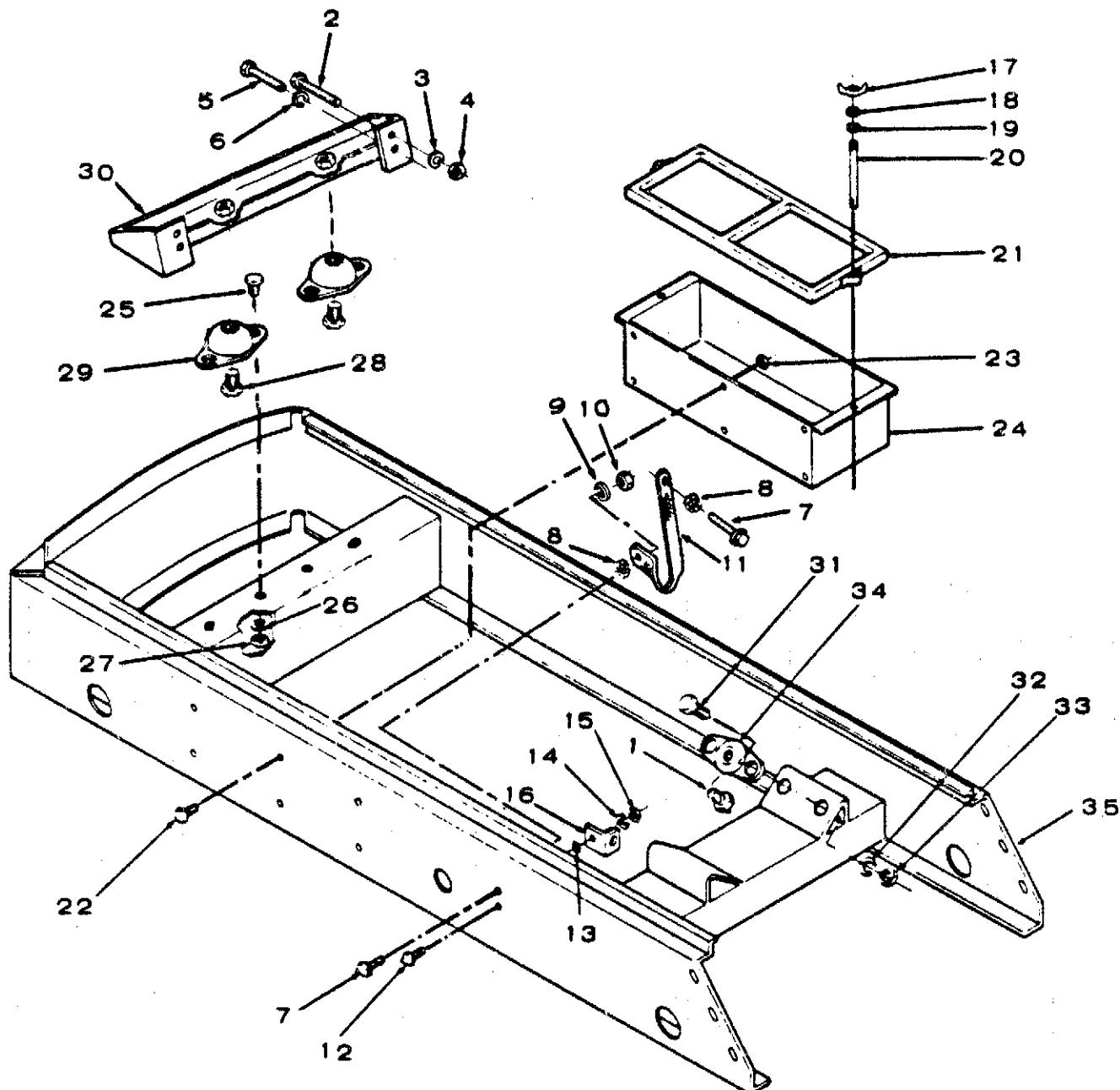
CHASSIS - DDB



CHASSIS - DDB

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0520	2	Screw, Cap - Hex Head (3/4-10 x 1")	20	520-0663	2	Stud (5/16-18 x 5/16-18 x 3-1/4" Lg)
2	800-0095	2	Screw, Cap - Hex Head (1/2-13 x 2-1/4")	21	416-0480	1	Frame, Holddown - Battery
3	850-0060	2	Washer, Lock - Spring (1/2")	22	821-0029	6	Screw, Self-locking - Hex Washer Head (3/8-16 x 3/4")
4	862-0016	2	Nut, Hex (1/2-13)	23	870-0281	6	Nut, Self-locking, Hex Washer Head (3/8-16)
5	800-0132	2	Screw, Cap - Hex Head (5/8-11 x 1-1/2")	24	416-0666	1	Tray - Battery
6	850-0050	2	Washer, Lock - Spring (5/8")	25	800-0090	2	Screw, Cap - Hex Head (1/2-13 x 1")
7	800-0091	2	Screw, Cap - Hex Head (1/2-13 x 1-1/4")	26	850-0060	2	Washer, Lock - Spring (1/2")
8	856-0013	2	Washer, Lock - External/Internal Tooth (1/2")	27	862-0016	2	Nut, Hex (1/2-13)
9	850-0060	1	Washer, Lock - Spring (1/2")	28	800-0520	1	Screw, Cap - Hex Head (3/4-10 x 1")
10	862-0016	1	Nut, Hex (1/2-13)	29	402-0030	1	Mount, Vibration - Engine
11	337-0090	1	Strap, Electrical	30	403-1110	1	Support, Mounting - Engine
12	800-0028	1	Screw, Cap - Hex Head (5/16-18 x 1")	31	800-0071	4	Screw, Cap - Hex Head (7/16-14 x 1")
13	856-0008	1	Washer, Lock - External/Internal Tooth (5/16")	32	850-0055	4	Washer, Lock - Spring (7/16")
14	850-0045	1	Washer, Lock - Spring (5/16")	33	862-0004	4	Nut, Hex (7/16-14)
15	862-0015	1	Nut, Hex (5/16-18)	34	402-0030	2	Mount, Vibration - Generator
16	332-1473	1	Terminal, Lug	35	800-0091	4	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
17	865-0007	2	Nut, Wing (5/16-18)	36	850-0060	4	Washer, Lock - Spring (1/2")
18	850-0045	2	Washer, Lock - Spring (5/16")	37	232-2106	2	Bracket, Mounting — Spec A Thru B
19	526-0115	2	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)	38	403-1112	1	Chassis (NOTE: Begin Spec C. Generator Mounting Brackets are welded in place.)

CHASSIS - LDDB



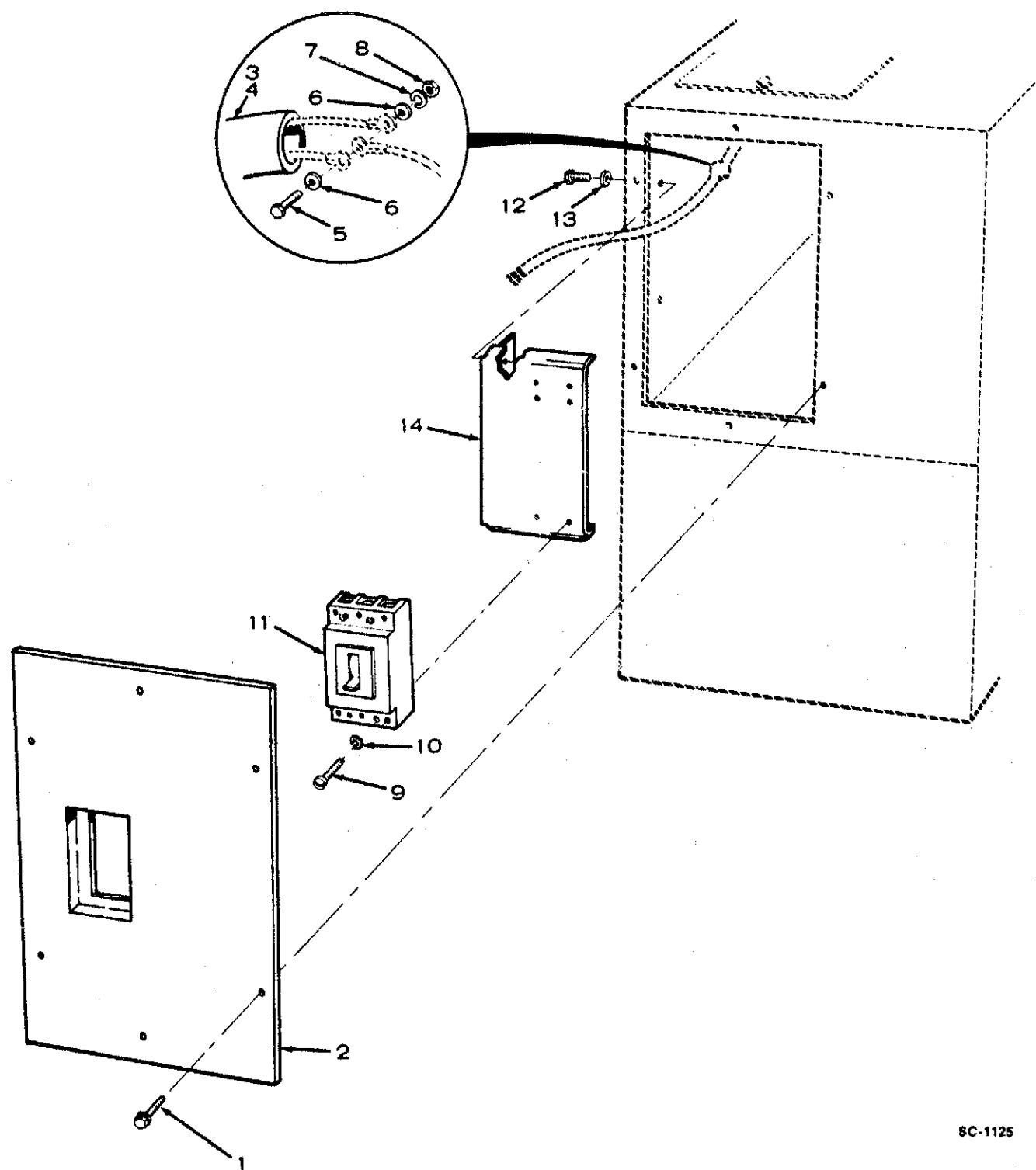
CHASSIS - LDDB

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0520	2	Screw, Cap - Hex Head (3/4-10 x 1")	20	520-0662	2	Stud (5/16-18 x 5/16-18 x 3-1/4" Lg)
2	800-0095	2	Screw, Cap - Hex Head (1/2-13 x 2-1/4")	21	416-0480	1	Frame, Holddown - Battery
3	850-0060	2	Washer, Lock - Spring (1/2")	22	821-0029	6	Screw, Self-locking - Hex Washer Head (3/8-16 x 3/4")
4	862-0016	2	Nut, Hex (1/2-13)	23	870-0281	6	Nut, Self-locking, Hex Washer Head (3/8-16)
5	800-0132	2	Screw, Cap - Hex Head (5/8-11 x 1-1/2")	24	416-0666	1	Tray - Battery
6	850-0050	2	Washer, Lock - Spring (5/8")	25	800-0090	4	Screw, Cap - Hex Head (1/2-13 x 1")
7	800-0091	2	Screw, Cap - Hex Head (1/2-13 x 1-1/4")	26	850-0060	4	Washer, Lock - Spring (1/2")
8	856-0013	2	Washer, Lock - External/Internal Tooth (1/2")	27	862-0016	4	Nut, Hex (1/2-13)
9	850-0060	1	Washer, Lock - Spring (1/2")	28	800-0520	2	Screw, Cap - Hex Head (3/4-10 x 1")
10	862-0016	1	Nut, Hex (1/2-13)	29	402-0371	2	Mount, Vibration - Engine
11	337-0090	1	Strap, Electrical	30	403-1374	1	Support, Mounting - Engine
12	800-0028	1	Screw, Cap - Hex Head (5/16-18 x 1")	31	800-0071	4	Screw, Cap - Hex Head (7/16-14 x 1")
13	856-0008	1	Washer, Lock - External/Internal Tooth (5/16")	32	850-0055	4	Washer, Lock - Spring (7/16")
14	850-0045	1	Washer, Lock - Spring (5/16")	33	862-0004	4	Nut, Hex (7/16-14)
15	862-0015	1	Nut, Hex (5/16-18)	34	402-0030	2	Mount, Vibration - Generator
16	332-1473	1	Terminal, Lug	35	403-1403	1	Chassis
17	865-0007	2	Nut, Wing (5/16-18)				
18	850-0045	2	Washer, Lock - Spring (5/16")				
19	526-0115	2	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)				

OPTIONAL EQUIPMENT SECTION

This section contains parts listing of factory installed options.
NOTE: options may not be applicable to all models; for field installations, additional parts are usually required.

OPTIONAL CIRCUIT BREAKER

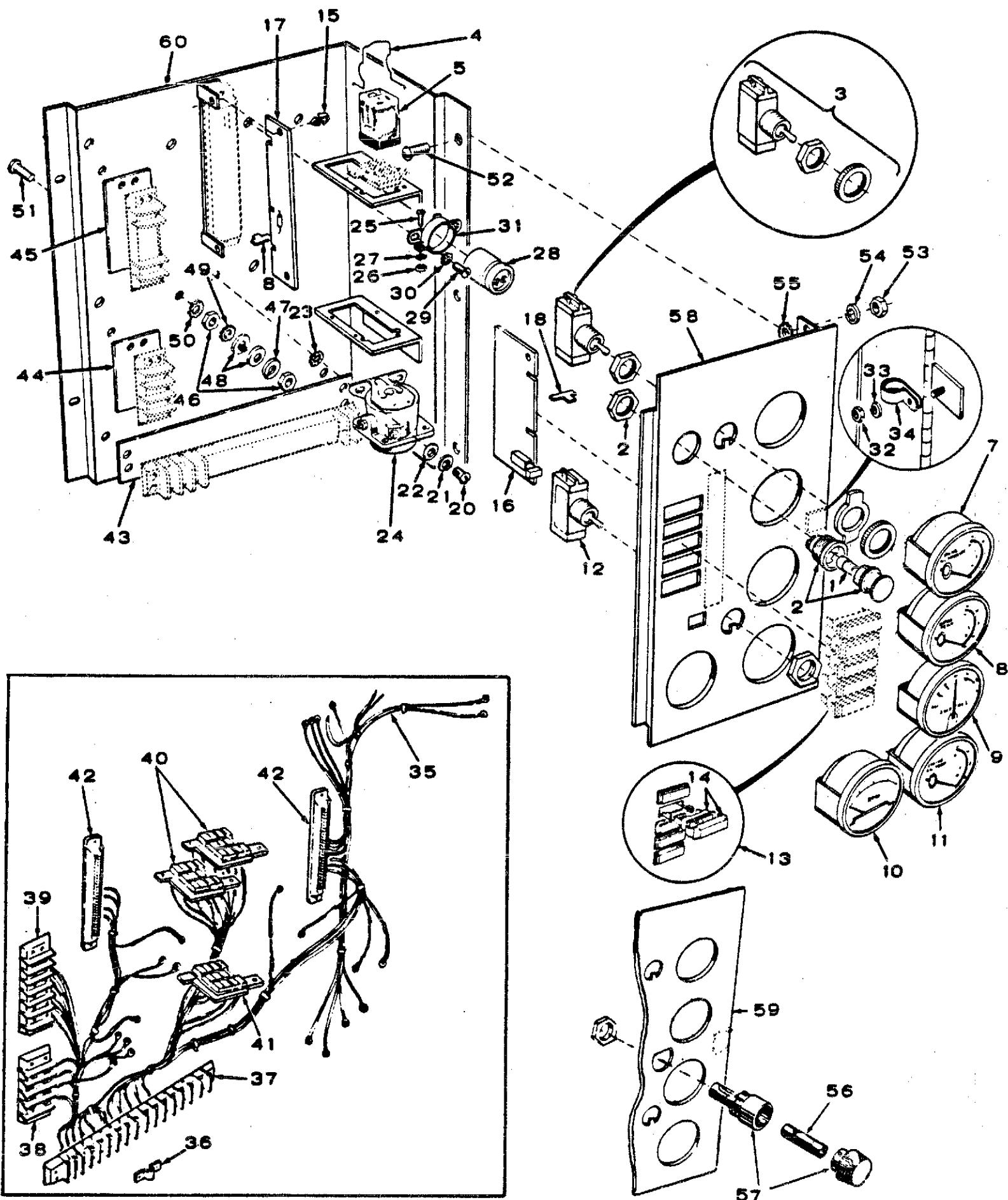


SC-1125

**OPTIONAL
CIRCUIT BREAKER**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	815-0350	6	Screw, Tapping - Hex Washer Head (#10-32 x 3/8)				125 AMP
2	301-3192	1	Panel, Cover - Circuit Breaker	320-0419		1	125 AMP, 3 PH, 200/346 - 220/380 VAC
3	SLEEVING, INSULATION - SHRINKABLE (Select as Required)						150 AMP
	898-0863	3/4" ID		320-0346		1	150 AMP, 3 PH, 120/208 - 120/240 VAC
	898-0865	1" ID		320-0425		1	150 AMP, 3 PH, 200/346 VAC
	898-0875	1-1/2" ID		320-0772		1	150 AMP, 3 PH, 127/220 VAC with 12 VDC shunt trip and AUX contacts
	898-0869	2" ID					175 AMP
4	SLEEVING, INSULATION — FIBERGLASS (Select as Required)			320-0344		1	175 AMP, 1 PH, 120/240 VAC
	898-0974	3/4" ID		320-0347		1	175 AMP, 3 PH, 120/208 - 120/240 VAC
5	800-0028	5	Screw, Cap - Hex Head (5/16-18 x 1")	320-0773		1	175 AMP, 3 PH, 127/220 VAC with 12 VDC shunt trip and AUX contacts
6	526-0022	10	Washer, Flat (21/64" ID x 9/16" OD x 1/16" Thk)				200 AMP
7	850-0045	5	Washer, Lock - Spring (5/16")	320-0348		1	200 AMP, 3 PH, 120/208 - 120/240 VAC
8	862-0015	5	Nut, Hex (5/16-18)				225 AMP
9	812-0094	4	Screw, Machine - Round Head (#8-32 x 3-5/8")	320-0359		1	225 AMP, 1 PH, 120/240 VAC
10	850-0025	4	Washer, Lock - Spring (#8)	320-0349		1	225 AMP, 3 PH, 120/208 VAC
11	CIRCUIT BREAKER (Select as Required)		40-50-60 AMP	12	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")
	320-0415	1	40 AMP, 3 PH, 347/600 VAC	13	850-0040	2	Washer, Lock - Spring (1/4")
	320-0413	1	50 AMP, 3 PH, 277/480 VAC	14	301-3197	1	Bracket, Mounting - Circuit Breaker
	320-0384	1	60 AMP, 3 PH, 200/346 - 220/380 VAC				
	320-0416	1	60 AMP, 3 PH, 347/600 VAC				
			70-90-100 AMP				
	320-0414	1	70 AMP, 3 PH, 277/480 VAC				
	320-0417	1	70 AMP, 3 PH, 347/600 VAC				
	320-0411	1	90 AMP, 3 PH, 120/240 VAC				
	320-0379	1	90 AMP, 3 PH, 200/346 - 220/380 - 277/480 VAC				
	320-0418	1	90 AMP, 3 PH, 347/600 VAC				
	320-0412	1	100 AMP, 3 PH, 120/208 VAC				
	320-0380	1	100 AMP, 3 PH, 200/346 - 220/380 - 277/480 VAC				
	320-0771	1	100 AMP, 3 PH, 127/220 VAC with 24 VDC shunt trip and AUX contacts				

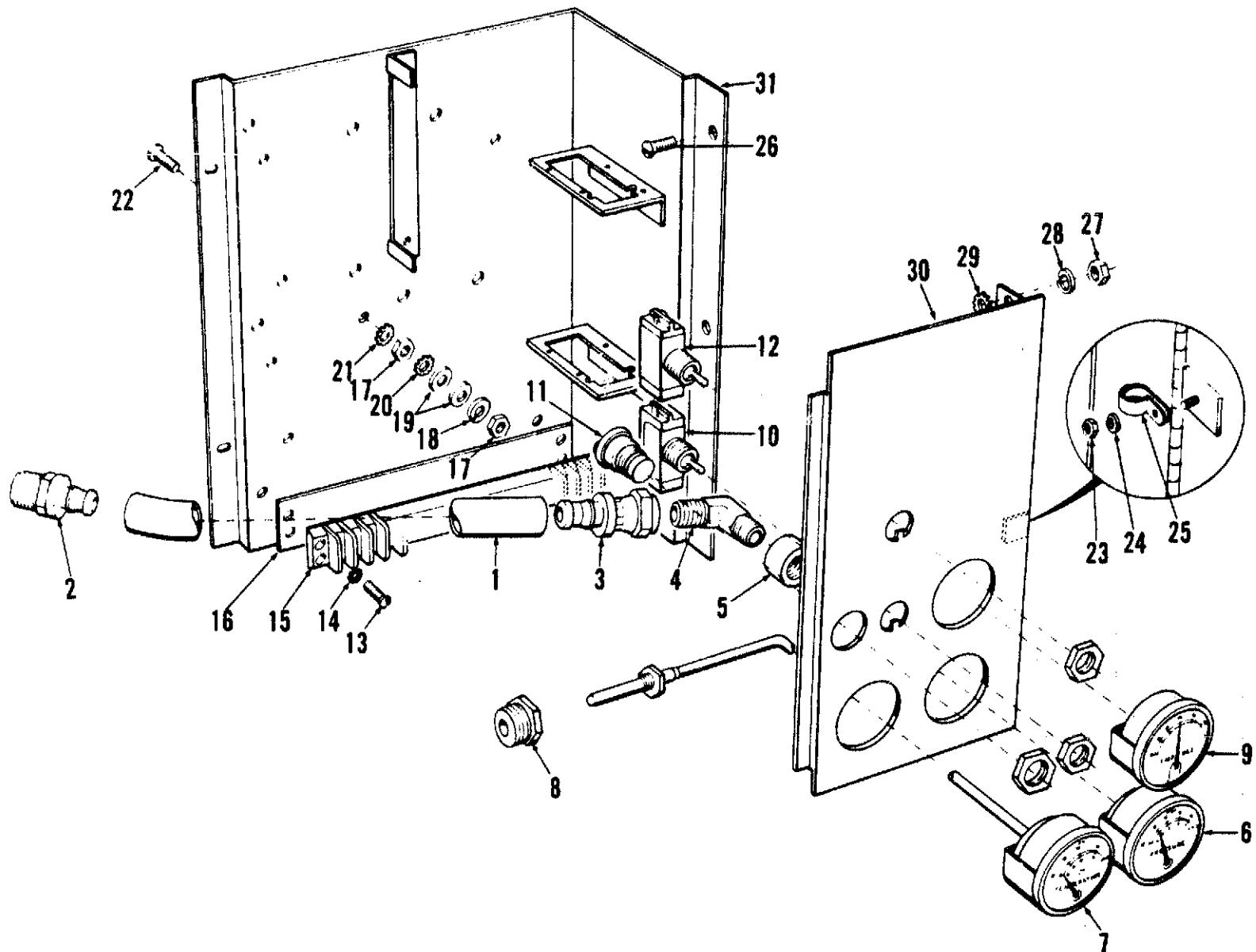
**OPTIONAL
ENGINE CONTROL WITH FIVE FAULT LIGHTS**



**OPTIONAL
ENGINE CONTROL WITH FIVE FAULT LIGHTS**

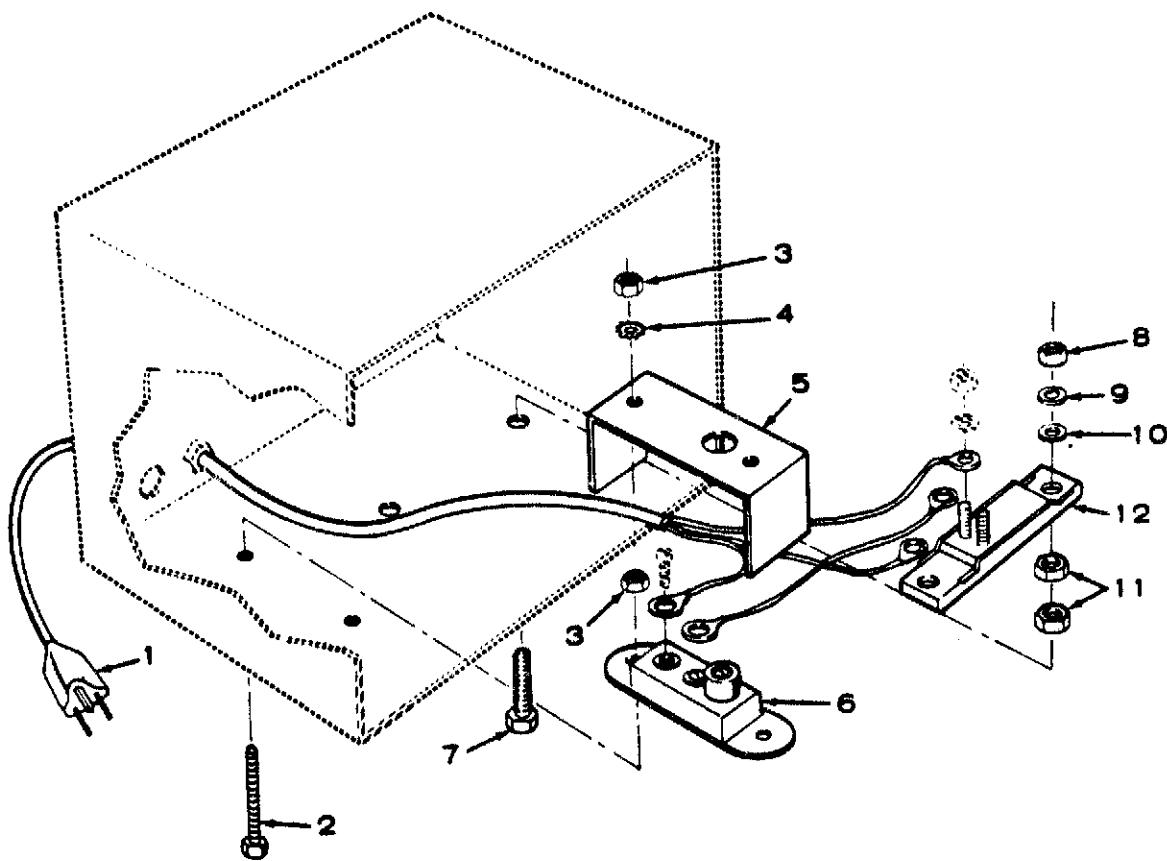
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	322-0004	1	Lamp Incandescent (12 VDC)	35	HARNESS, WIRING - ENGINE CONTROL		
2	322-0149	1	Lampholder	338-1068		1	Includes Parts Marked +
3	308-0002	1	Switch, Toggle (SPST)	338-1221		1	£ Includes Parts Marked +
4	307-1157	3	Spring, Holddown - Relay				ATTACHING HARDWARE FOR WIRING HARNESS
5	RELAY (12 VDC)			812-0063		6	Screw, Machine - Round Head (#6-32 x 1/2")
	307-1058	1	(Ignition)	812-0066		6	Screw, Machine - Round Head (#6-32 x 3/4")
	307-1058	1	(Start Disconnect)	853-0003		14	Washer, Lock - ET (#6)
	307-1061	1	(Starter Protection)	860-0006		10	Nut, Hex (#6-32)
7	193-0243	1	Gauge - Oil Pressure (12 VDC)	36	332-1043	1	+Jumper, Terminal
8	193-0245	1	Gauge - Water Temperature (12 VDC)	37	332-0795	1	+Block, Terminal - 20 Place
9	302-0061	1	Ammeter	38	332-0537	1	+Block, Terminal - 4 Place
10	302-0749	1	†Tachometer - Electrical	39	332-0699	1	+Block, Terminal - 6 Place
11	193-0248	1	†Gauge - Oil Temperature (12 VDC)	40	323-0765	2	+Socket, Relay - 11 Place
12	SWITCH, TOGGLE - SELECTOR			41	323-0764	2	+Socket, Relay - 8 Place
	308-0138	1	Standard & Cycle Cranking Controls	42	332-1271	1	+Connector, Electrical - PC BD
	309-0327	1	Penn State Controls	43	332-1559	1	Strip, Marker - Terminal
13	*LIGHT, INDICATOR-14 VDC (Lens Color & Legend Listed Below)			44	332-1239	1	Strip, Marker - Terminal
	322-0107	1	Red - OVERCRANK	45	332-1240	1	Strip, Marker - Terminal
	322-0111	1	Red - OVERSPEED				GROUND TERMINAL ASSEMBLY (Includes Parts Marked #)
	322-0108	1	Red - LO OIL PRESS	46	871-0010	2	#Nut, Hex - Brass (#10-32)
	322-0109	1	Red - HI ENG TEMP	47	850-0030	1	#Washer, Lock - Spring (#10)
	322-0110	2	Red - LO ENG TEMP	48	526-0062	2	#Washer, Flat - Brass (13/64" ID x 1/2" OD x 1/16" Thk)
14	322-0136	1	*Light, Indicator - 14 VDC (Red Lens - No Legend)	49	853-0008	1	#Washer, Lock - ET (#10)
15	518-0374	4	Fastener, Snap-In (Printed Circuit Boards)	50	856-0003	1	#Washer, Lock - EIT (#10)
16	PRINTED CIRCUIT BOARD ASSEMBLY			51	815-0203	1	#Screw, Machine - Round Head, Brass (#10-32 x 7/8")
	300-0733	1	Standard Cranker (12 VDC)	52	815-0026	5	Screw, Machine - Truss Head (#10-32 x 3/8")
	300-0714	1	Cycle Cranker (12 VDC)	53	870-0053	1	Nut, Hex (#10-32)
17	PRINTED CIRCUIT BOARD ASSEMBLY			54	850-0030	1	Washer, Lock - Spring (#10)
	300-0681	1	Engine Control Monitor - Standard	55	856-0003	1	Washer, Lock - EIT (#10)
18	332-1276	4	Plug, Keying - PC Board	56	321-0181	1	£ Fuse (5 Amp)
20	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")	57	321-0217	1	£ Fuseholder
21	850-0030	2	Washer, Lock - Spring (#10)				PANEL, CONTROL - ENGINE
22	526-0009	2	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)	301-3267		1	With Three Gauge Mtg. Holes
23	856-0003	2	Washer, Lock - EIT (#10)	301-3286		1	With Four Gauge Mtg. Holes
24	307-1031	1	Relay, Solenoid - Start (12 VDC)	301-3166		1	With Five Gauge Mtg. Holes
25	812-0061	1	Screw, Machine - Round Head (#6-32 x 3/8")				58 £ PANEL, CONTROL - ENGINE
26	860-0006	1	Nut, Hex (#6-32)	301-4831		1	With Three Gauge Mtg. Holes
27	853-0003	1	Washer, Lock - ET (#6)	301-6152		1	With Four Gauge Mtg. Holes
28	356-0072	1	Capacitor, Fixed Electrolytic (4000 MFD, 30 VDC)	301-6186		1	With Five Gauge Mtg. Holes
29	812-0063	2	Screw, Machine - Round Head (#6-32 x 1/2")	59	301-3253	1	Bracket, Mounting - Engine Control
30	853-0003	2	Washer, Lock - ET (#6)				• - NOTE: For lamp replacement order 322-0136 Remove and discard plain red lens, install lens with legend from burned out light - lights snap in and out of panel.
31	356-0070	1	Clamp, Capacitor Mounting				† - Optional items used with Engine Mounted Senders.
32	870-0053	1	Nut, Hex (#10-32)				+ - Parts Included in Wiring Harness
33	850-0030	1	Washer, Lock - Spring (#10)				# - Parts Included in Ground Terminal Assembly
34	332-0051	1	Clamp, Loop				£ - Parts Used on Hi Ambient Temp (L) Type GenSets.

**OPTIONAL
ENGINE CONTROL WITH MECHANICAL GAUGES**



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-1077	1	Hose, Rubber - High Pressure (1-4" ID x 1/2" OD x 96" lg)	13	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")
2	502-0444	1	Adapter, Pipe to Hose - Male (1/8" NPT x 1/4" ID Hose)	14	853-0003	2	Washer, Lock - ET (#6)
3	502-0445	1	Adapter, Pipe to Hose - Female (7/16-20 UNF x 1/4" ID Hose)	15	332-0795	1	Block, Terminal - 20 Place
4	502-0583	1	Elbow, Pipe - 45 Deg. (7/16-20 UNF x 1/8" NPT)	16	332-1241	1	Strip, Marker - Terminal
5	502-0051	1	Coupling, Pipe (1/8" NPT)	17	871-0010	2	Nut, Hex - Brass (#10-32)
6	GAUGE, OIL PRESSURE (Select as Required)			18	850-0030	1	Washer, Lock - Spring (#10)
	193-0232	1	Scale Range 0 to 75 PSI	19	526-0062	2	Washer, Flat - Brass (13/64" ID 1/2" OD x 1/16" Thk)
	193-0233	1	Scale Range 0 to 150 PSI	20	853-0008	1	Washer, Lock - ET (#10)
7	GAUGE, TEMPERATURE (Select as Required)			21	856-0003	1	Washer, Lock - EIT (#10)
	193-0234	1	With 72" Capillary Tube	22	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")
	193-0235	1	With 84" Capillary Tube	23	870-0053	1	Nut, Hex (#10-32)
	193-0236	1	With 96" Capillary Tube	24	850-0030	1	Washer, Lock - Spring (#10)
	193-0305	1	With 144" Capillary Tube	25	332-0051	1	Clamp, Loop
8	REF	1	Reducer, Hex (Included with Gauge) (5/8-18 UNF x 1/2" NPT)	26	815-0026	5	Screw, Machine - Truss Head (#10-32 x 3/8")
9	302-0061	1	Ammeter	27	870-0053	1	Nut, Hex (#10-32)
10	308-0088	1	Switch, Toggle (DPST)	28	850-0030	1	Washer, Lock - Spring (#10)
11	308-0297	1	Switch, Push	29	856-0003	1	Washer, Lock - EIT (#10)
12	308-0155	1	Switch, Toggle (SPST)	30	301-4009	1	Panel, Control - Engine
				31	301-3253	1	Bracket, Mounting - Engine Control

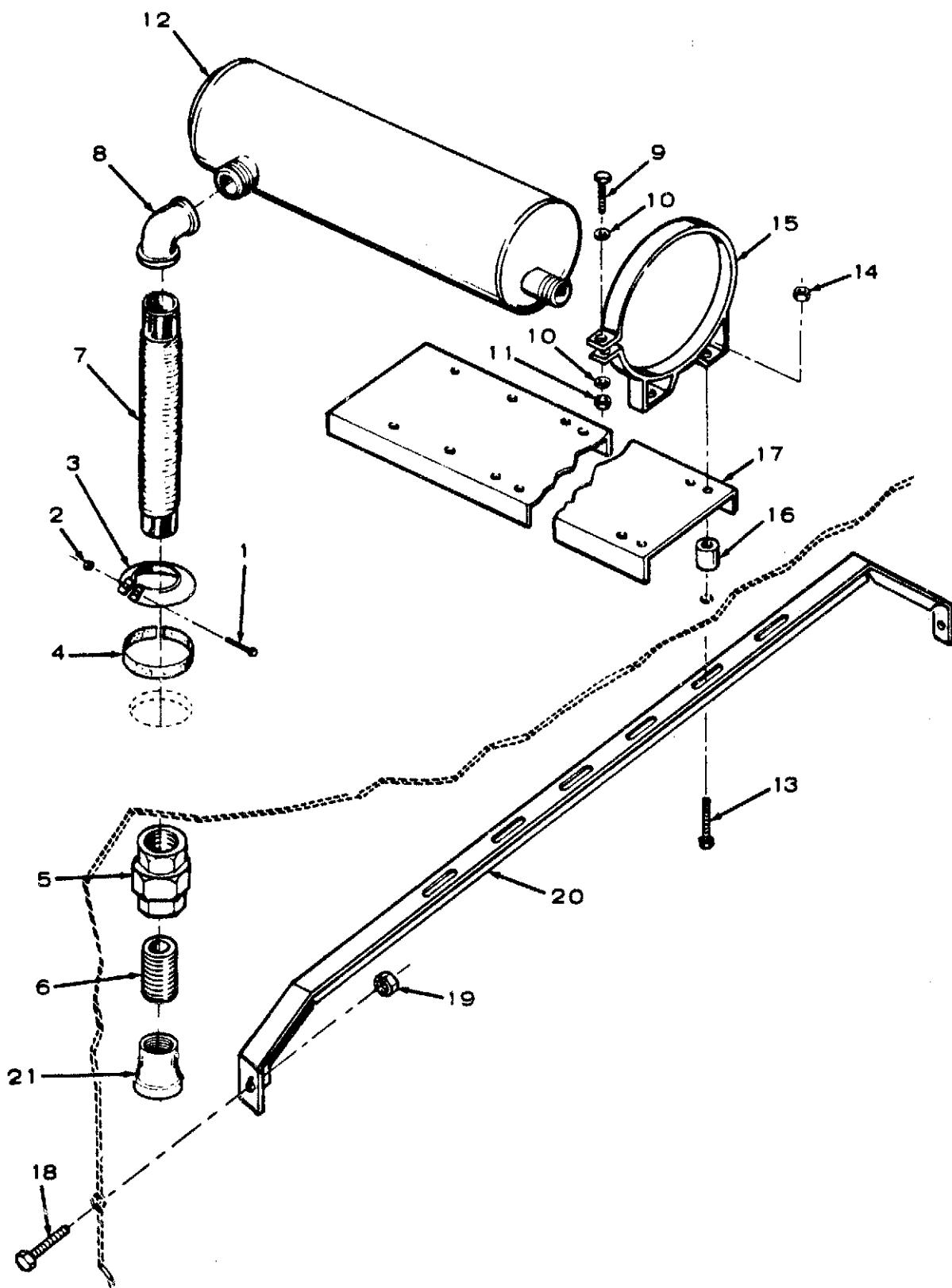
OPTIONAL CONTROL HEATER



SC-1158

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	335-0110	1	Cable, Electrical (3 Wire)
2	812-0090	2	Screw, Machine - Round Head (#6-32 x 2-1/4")
3	860-0006	4	Nut, Hex (#6-32)
4	856-0001	2	Washer, Lock - EIT (#6)
5	301-1886	1	Cover, Thermostat
6	309-0128	1	Thermostat - Adjustable
7	800-0007	2	Screw, Cap - Hex Head (1/4-20 x 1")
8	862-0001	2	Nut, Hex (1/4-20)
9	850-0040	2	Washer, Lock - Spring (1/4)
10	526-0052	2	Washer, Flat (17/64" ID x 9/16" OD x 1/16" Thk)
11	862-0015	4	Nut, Hex (5/16-18) - Used As Spacers
12	333-0151	1	Heater - 75 Watt, 120 VAC. 300 Watt, 240 VAC

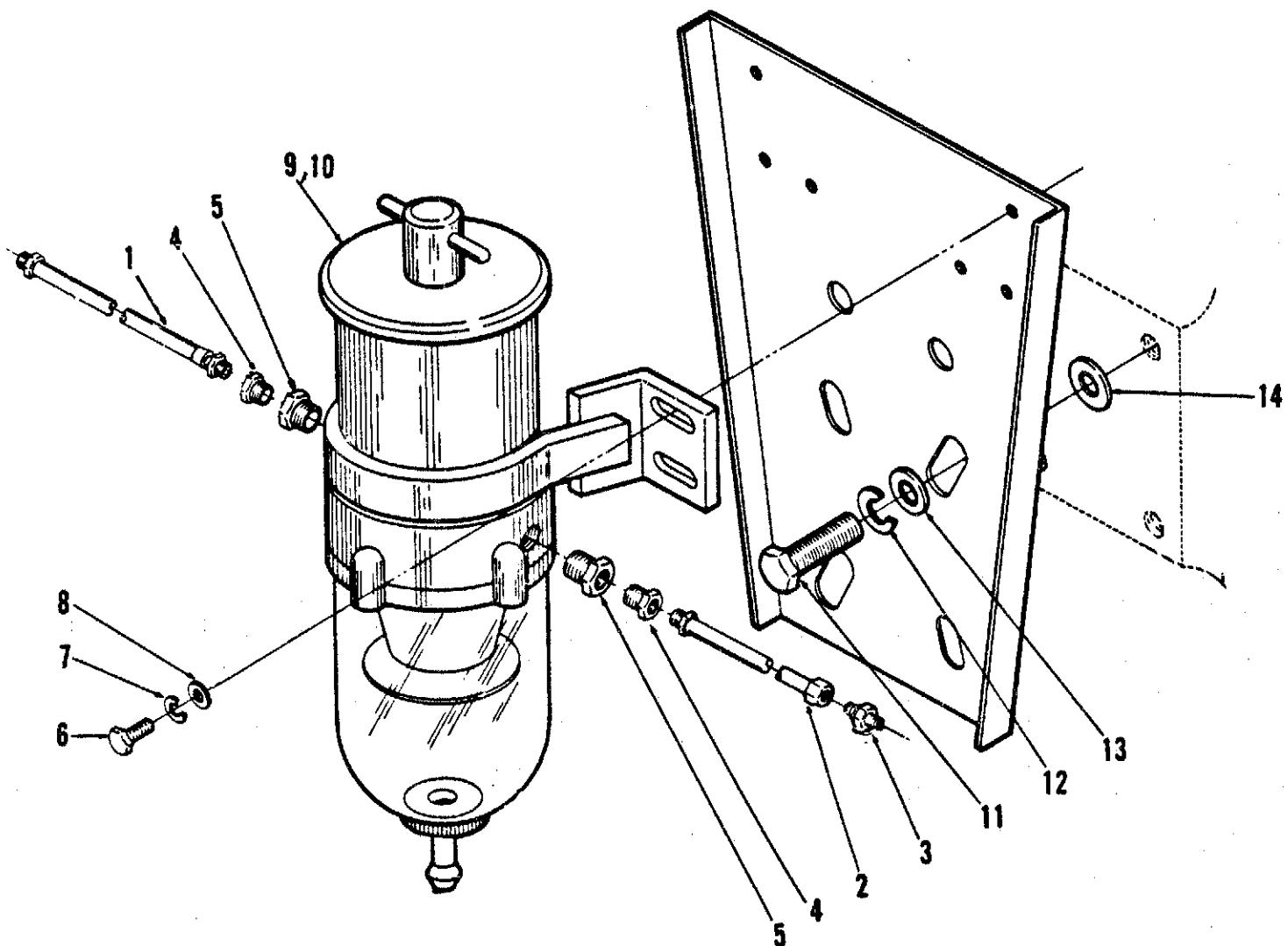
**OPTIONAL
EXHAUST SYSTEM
(HOUSED SETS)**



**OPTIONAL
EXHAUST SYSTEM
(HOUSED SETS)**

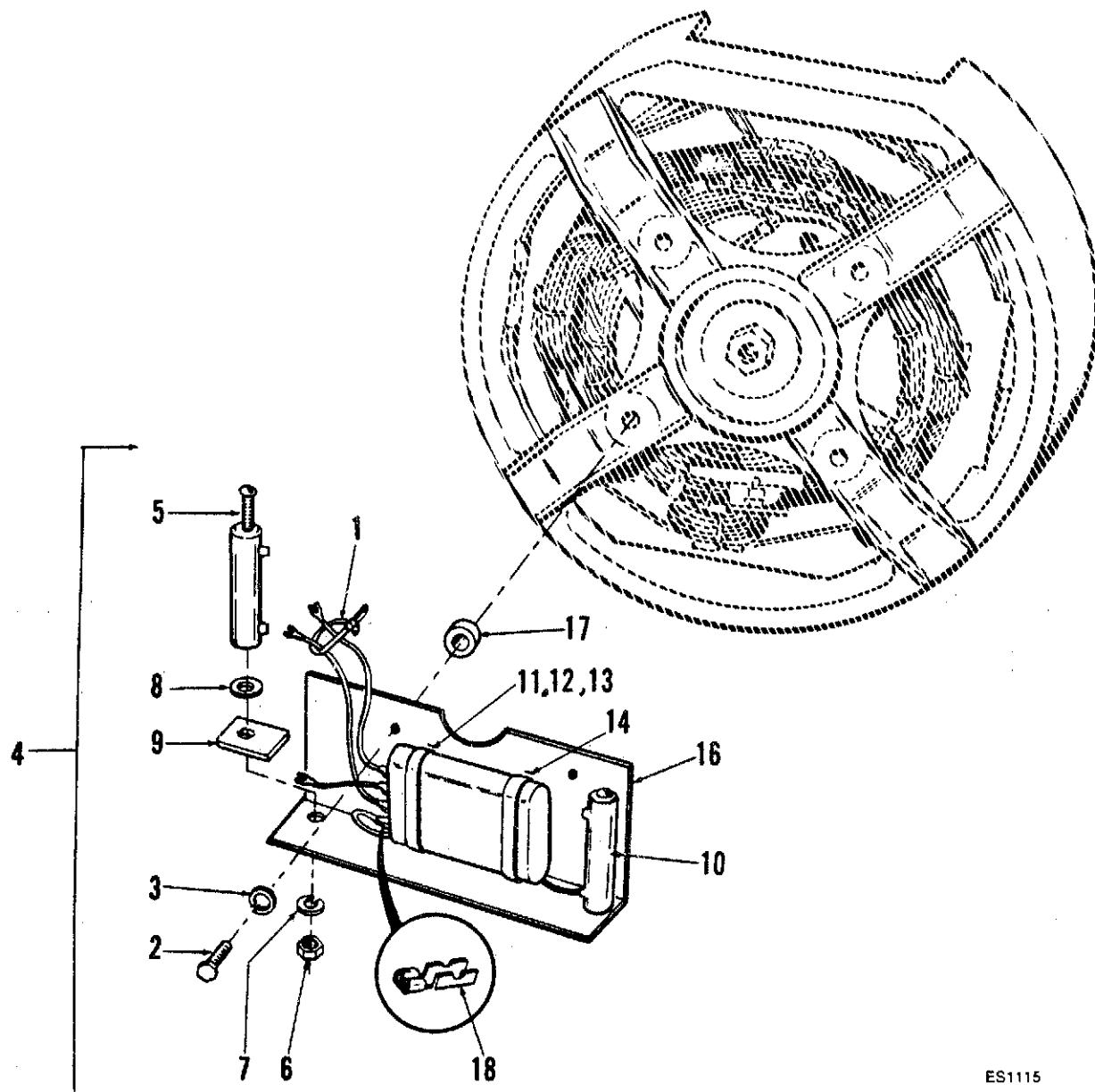
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	813-0105	1	Screw, Machine - Round Head (#10-32 x 1")
2	870-0188	1	Nut, Self-locking, Hex (#10-32)
3	155-1421	1	Shield, Rain (2-1/2" ID)
4	895-0158	1	Asbestos, Strip (2" x 10" x 1/16" Thk)
5	505-0454	1	Union, Pipe (2" NPT)
6	505-0172	1	Nipple, Pipe - Close (2" NPT x 2" Lg)
7	TUBE, EXHAUST 155-1591 155-1593 155-1649	1 1 1	2" NPT x 10-3/4" Lg 2" NPT x 12-3/4" Lg 2" NPT x 11-7/8" Lg
8	505-0175	1	Elbow, Pipe - 90 DEG (2" NPT)
9	800-0037	3	Screw, Cap - Hex Head (5/16-18 x 3")
10	526-0113	6	Washer, Flat (11/32" ID x 1" OD x 3/32" Thk)
11	870-0257	3	Nut, Self-locking, Hex Washer Head (5/16-18)
12	MUFFLER, EXHAUST (Select as Applicable) 155-0988 155-1512	1 1	Industrial (10" OD x 43" Lg) Industrial, SST (10" OD x 43" Lg)
13	155-1617	1	Critical (12" OD x 44" Lg)
14	800-0037	6	Screw, Cap - Hex Head (5/16-18 x 3")
15	BAND, MOUNTING - MUFFLER 140-0649 140-1588 140-0752	3 3 3	10" ID 10" ID, SST 12" ID
16	155-1430	6	Spacer, Sleeve (1/2" ID x 1-1/2" OD x 2" Thk)
17	HEAT SHIELD 155-0978 155-1644 155-1648	1 1 1	10" W x 36" Lg 10" W x 36" Lg, SST 10" W x 40" Lg, SST
18	800-0026	6	Screw, Cap - Hex Head (5/16-18 x 3/4")
19	870-0048	6	Nut, Self-locking, Hex (5/16-18)
20	155-0789	3	Support, Mounting - Muffler
21	505-0111	1	Coupling, Reducer (2-1/2" x 2")

**OPTIONAL
FILTER - SEPARATOR
(FUEL/WATER)**



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	501-0008	1	Line, Fuel - Flexible
2	501-0008	1	Line, Fuel - Flexible
3	502-0003	1	Connector, Line - Inverted Male
4	502-0029	2	Bushing, Reducer - Hex
5	502-0639	2	Adapter - Pipe to Line
6	800-0005	4	Screw, Cap - Hex Head (1/4-20 x 3/4")
7	850-0040	4	Washer, Lock-Spring (1/4")
8	526-0015	4	Washer, Flat (9/32" ID x 9/16" OD x 1/16" Thk)
9	149-1612	1	Filter - Fuel/Water (Includes Element)
10	149-1690	1	Element - Fuel Filter
11	800-0091	4	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
12	850-0060	4	Washer, Lock - Spring (1/2")
13	526-0028	4	Washer, Flat (9/16" ID x 15/16" OD x 1/16" Thk)
14	526-0219	8	Washer, Flat (12/32" ID x 1" OD x 1/8" Thk)
15	149-1614	1	Bracket, Mounting - Fuel Filter

OPTIONAL VOLTAGE REGULATOR FILTER



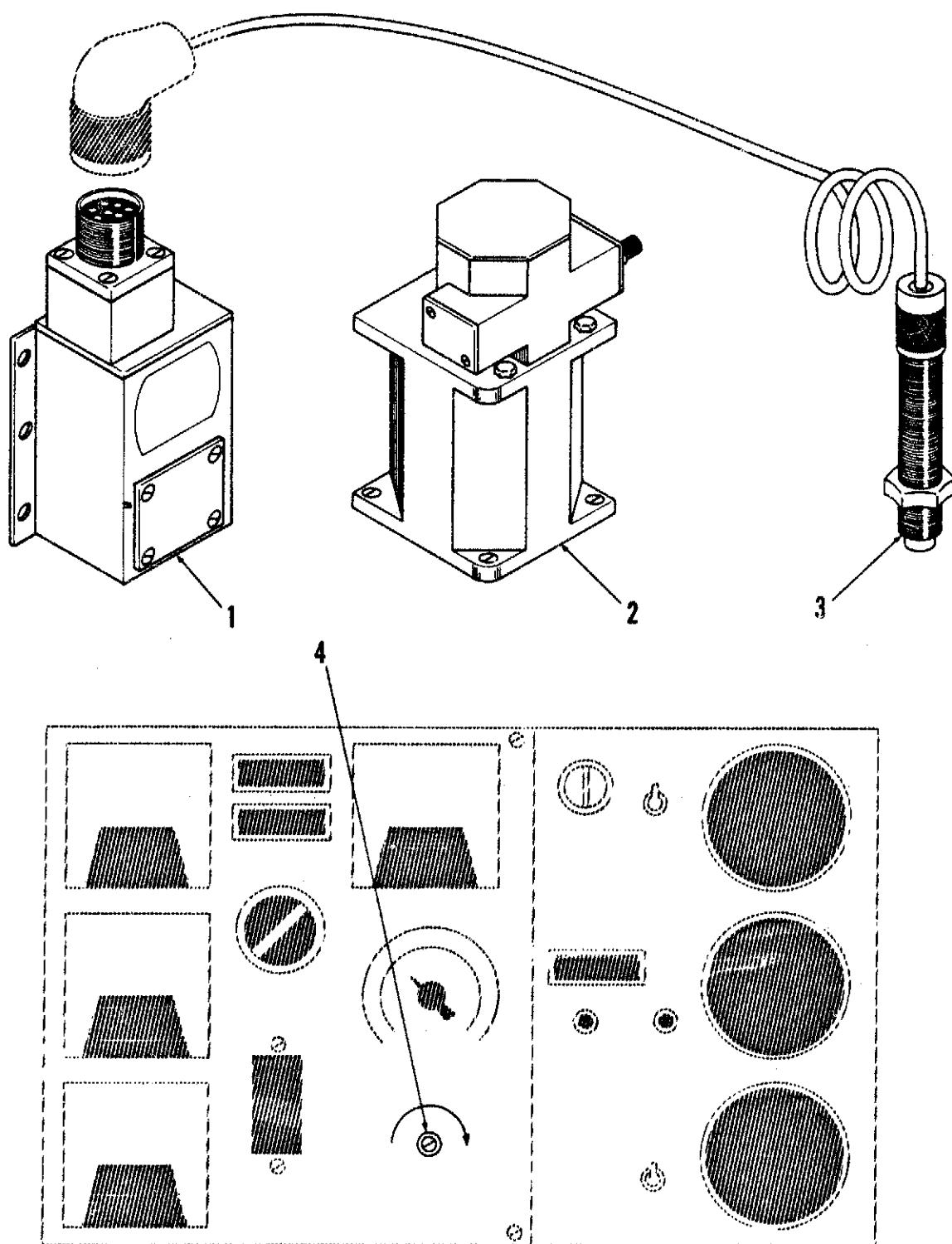
ES1115

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
			KIT, FILTER - VOLTAGE REGULATOR (Includes Parts Marked *)	7	850-0040	2	Washer, Lock - Spring (1/4")
232-2694	1	1	Used on Sets with End Bell Mounted Voltage Regulator	8	304-0427	4	Washer, Centering (1/4")
232-2695	1	1	Used on Sets with Voltage Regulator Mounted in Control Box	9	304-0292	2	Insulator
1	332-0941	5	"Tie, Cable	10	354-0025	2	Resistor, Fixed, Wire Wound (10-Ohm, 100 Watt)
2	800-0003	2	"Screw, Cap - Hex Head (1/4-20 x 1/2")	11	813-0098	4	Screw, Machine - Round Head (#10-32 x 3/8")
3	850-0040	2	"Washer, Lock - Spring (1/4")	12	870-0053	4	Nut, Hex (#10-32)
4	REF	REF	*FILTER ASSEMBLY (Includes all Parts Except as Indicated)	13	850-0030	4	Washer, Lock - Spring (#10)
232-2219	REF	REF	Part of Kit 232-2694	14	312-0189	2	Bracket, Mounting - Capacitor
232-2692	REF	REF	Part of Kit 232-2695	15	312-0188	1	Capacitor, Fixed - 15 MFD, 440 VAC
5	812-0165	2	Screw, Machine - Round Head (1/4-20 x 4-1/2")	16	232-2210	1	Bracket, Mounting
6	862-0001	2	Nut, Hex (1/4-20)	17	232-2693	3	Spacer (Part of 232-2692 Only)
				18	TERMINALS (Select as Required)		
				332-1279	8	Insulated 14-16 AWG	
				332-0529	4	Lug 14-16 AWG	

* Parts included in kits.

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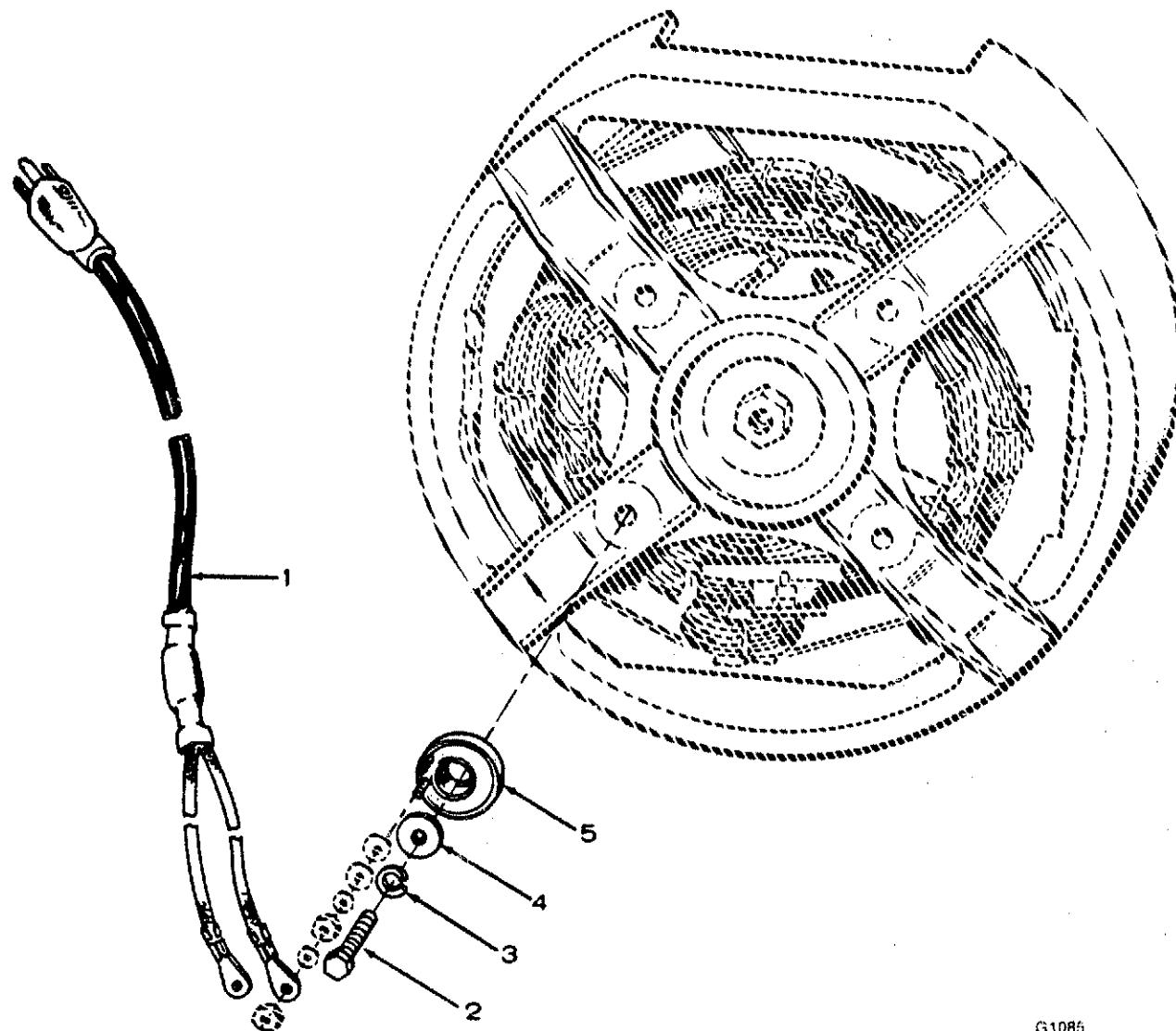
OPTIONAL GOVERNOR



XFS1272

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	151-0430	1	Control Unit - Governor (12V)
2	151-0452	1	Actuator - Governor (12V)
3	151-0411	1	Pickup, Magnetic
4	151-0402	1	Potentiometer - Speed Control (5K Ohms)

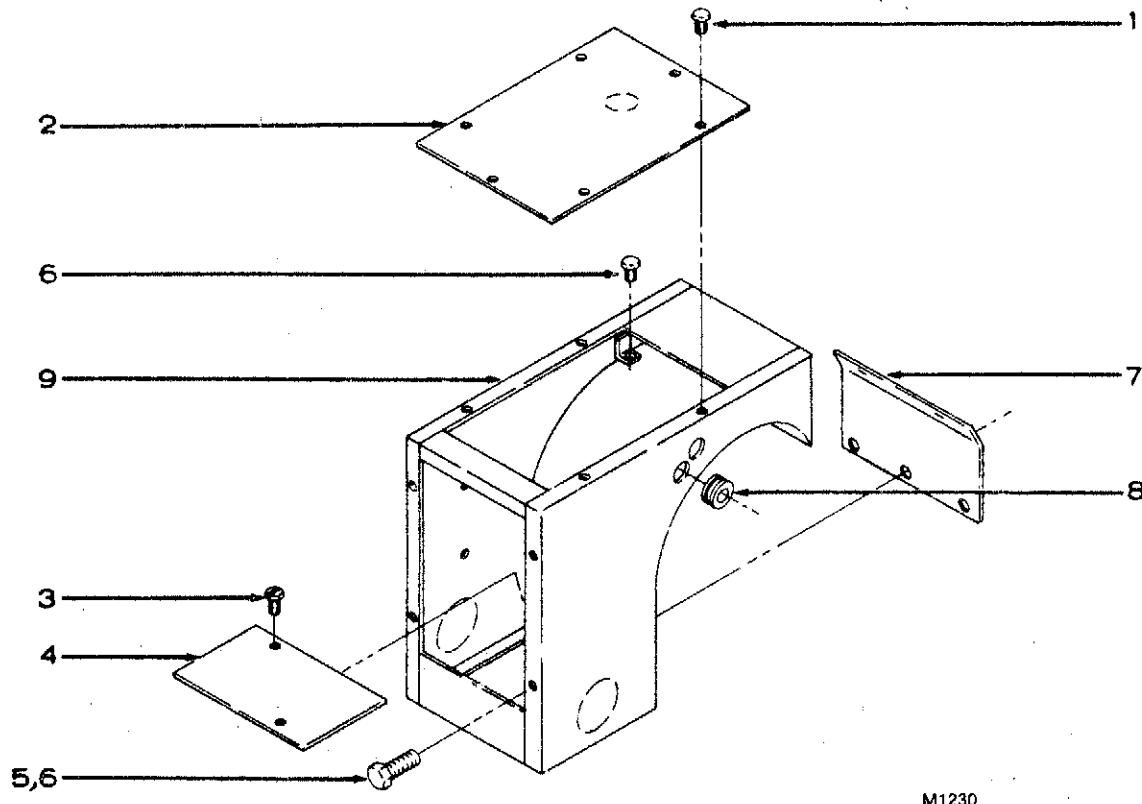
**OPTIONAL
GENERATOR HEATER**



G1085

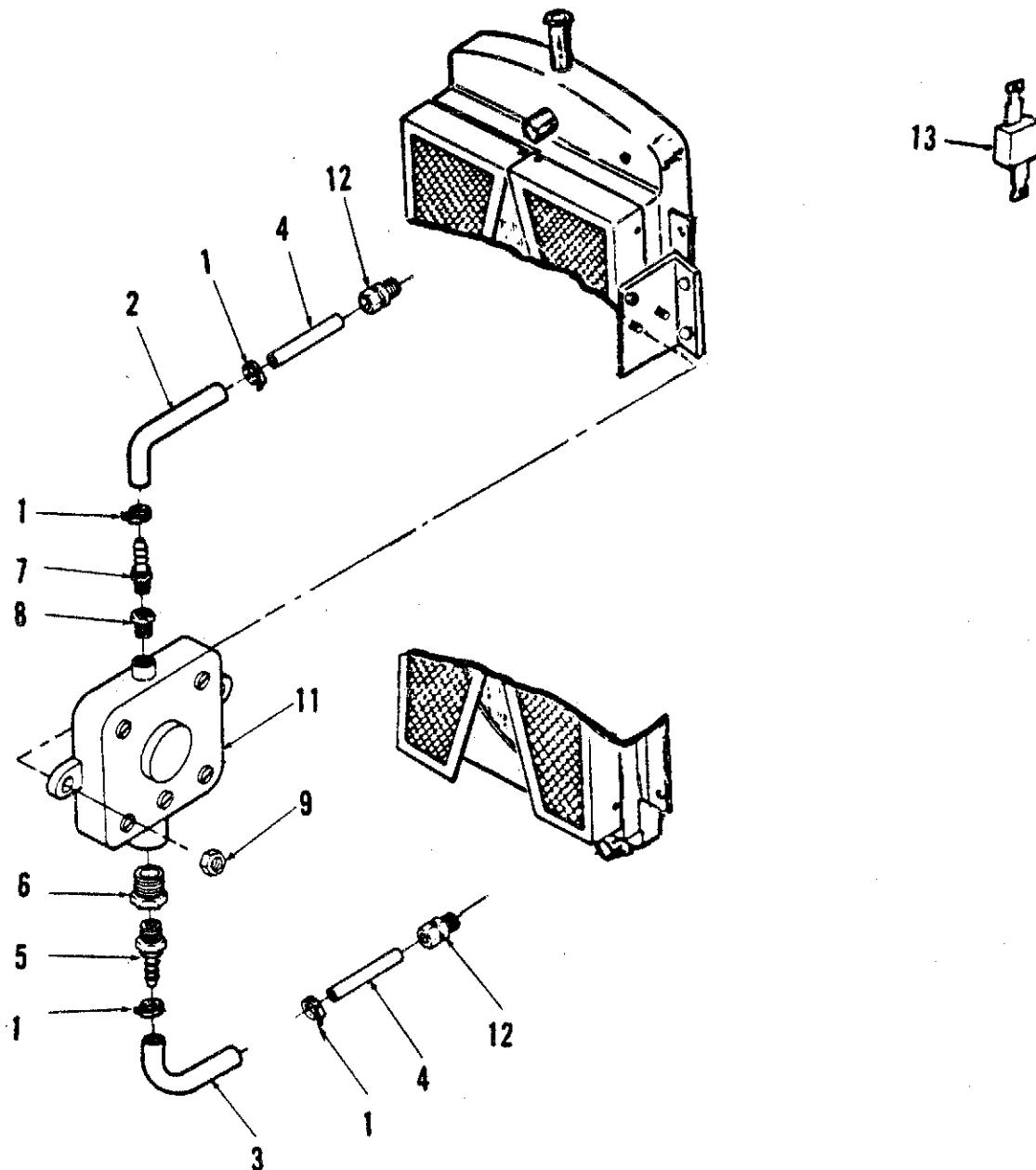
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
HEATER, GENERATOR			
		1	120 Volt
		1	240 Volt
1 CABLE ASSEMBLY (Includes Thermostat)			
	335-0146	1	120 Volt
	335-0147	1	240 Volt
2 800-0004			
		1	Screw, Cap - Hex Head (1/4-20 x 5/8")
3 850-0038			
		1	Washer, Lock - Spring (1/4")
4 526-0158			
		1	Washer, Flat (17/64" ID 1" OD x 1/8" Thk)
5 HEATER, ELECTRICAL			
	333-0059	1	120 Volt, 125 Watt
	333-0192	1	240 Volt, 200 Watt

**OPTIONAL
OUTPUT BOX ASSEMBLY
(HOUSED SETS)**



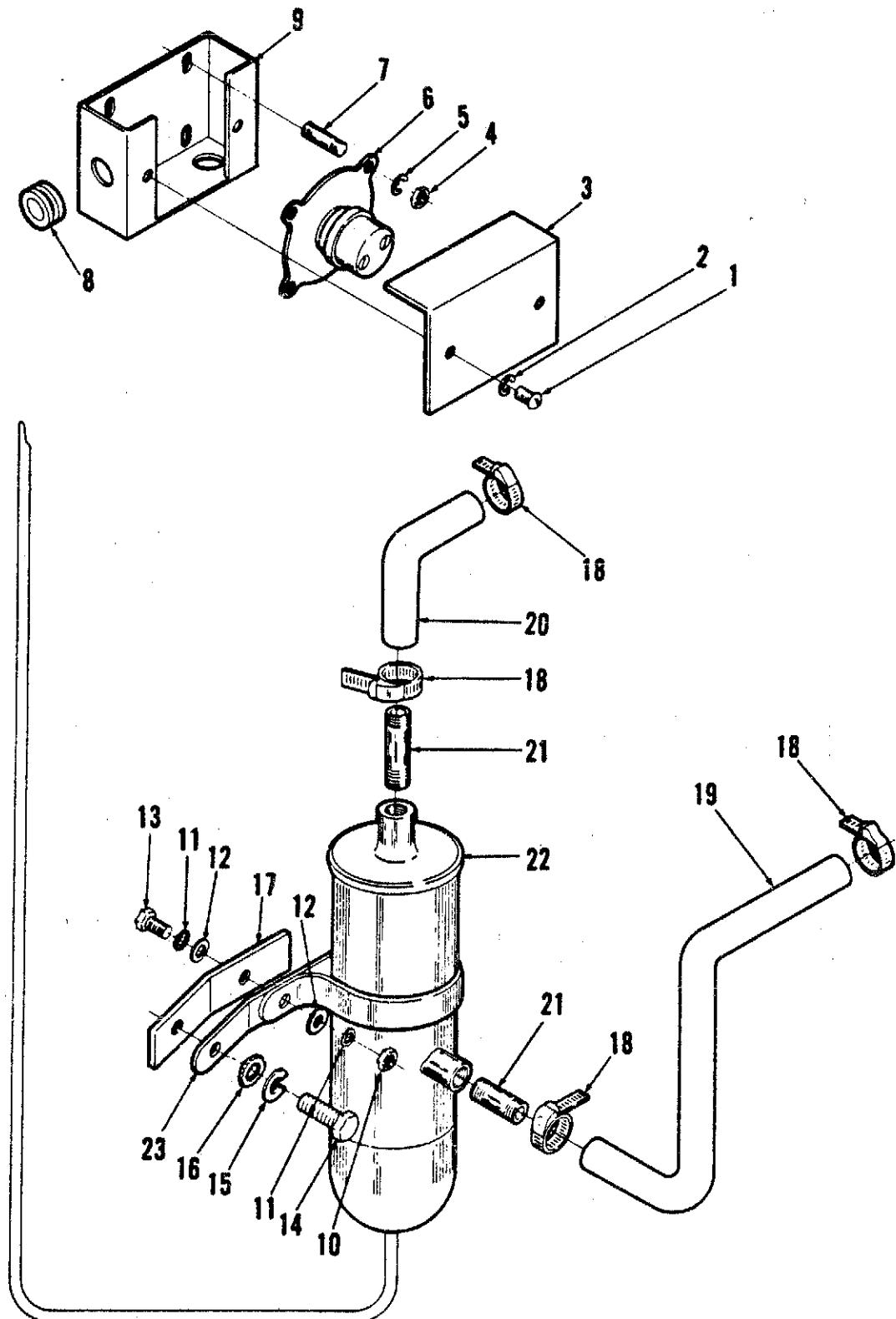
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	821-0005	4	Screw, Self-locking - Hex Washer Head (#10-32 x 1/2")
2	301-3156	1	Panel, Access
3	815-0350	2	Screw, Tapping - Hex Head, Slotted (#10-32 x 3/8")
4	301-3195	1	Plate, Access - Button
5	821-0014	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
6	821-0010	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
7	301-3196	1	Bracket, Support - Current Transformer Assy
8	508-0203	1	Bushing, Nylon
9	301-3191	1	Box, Output

**OPTIONAL
LOW COOLANT LEVEL SWITCH**



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0685	4	Clamp, Hose	8	505-0007	1	Bushing, Reducer - Brass (1/4" NPT x 1/8" NPT)
2	503-0707	1	Hose, Vinyl (1/4" ID x 12" Lg)	9	870-0212	2	Nut, Self-locking - Hex Washer Head (1/4-20)
3	503-1199	1	Hose, Vinyl (1/4" ID x 24" Lg)	11	193-0329	1	Switch - Coolant Level
4	130-2053	2	Tube (1/4" OD x 2" Lg)	12	502-0809	2	Adapter, Tube (Blind Hole Fitting) (5/8" OD x 1/4" Tube)
5	502-0389	1	Adapter - Hose to Pipe	13	357-0030	2	Diode, Rectifier
6	505-0151	1	Bushing, Reducer - Brass (1/2" NPT x 1/8" NPT)				
7	502-0389	1	Adapter - Hose to Pipe				

**OPTIONAL
ENGINE COOLANT HEATER
(VERTICAL TANK)**

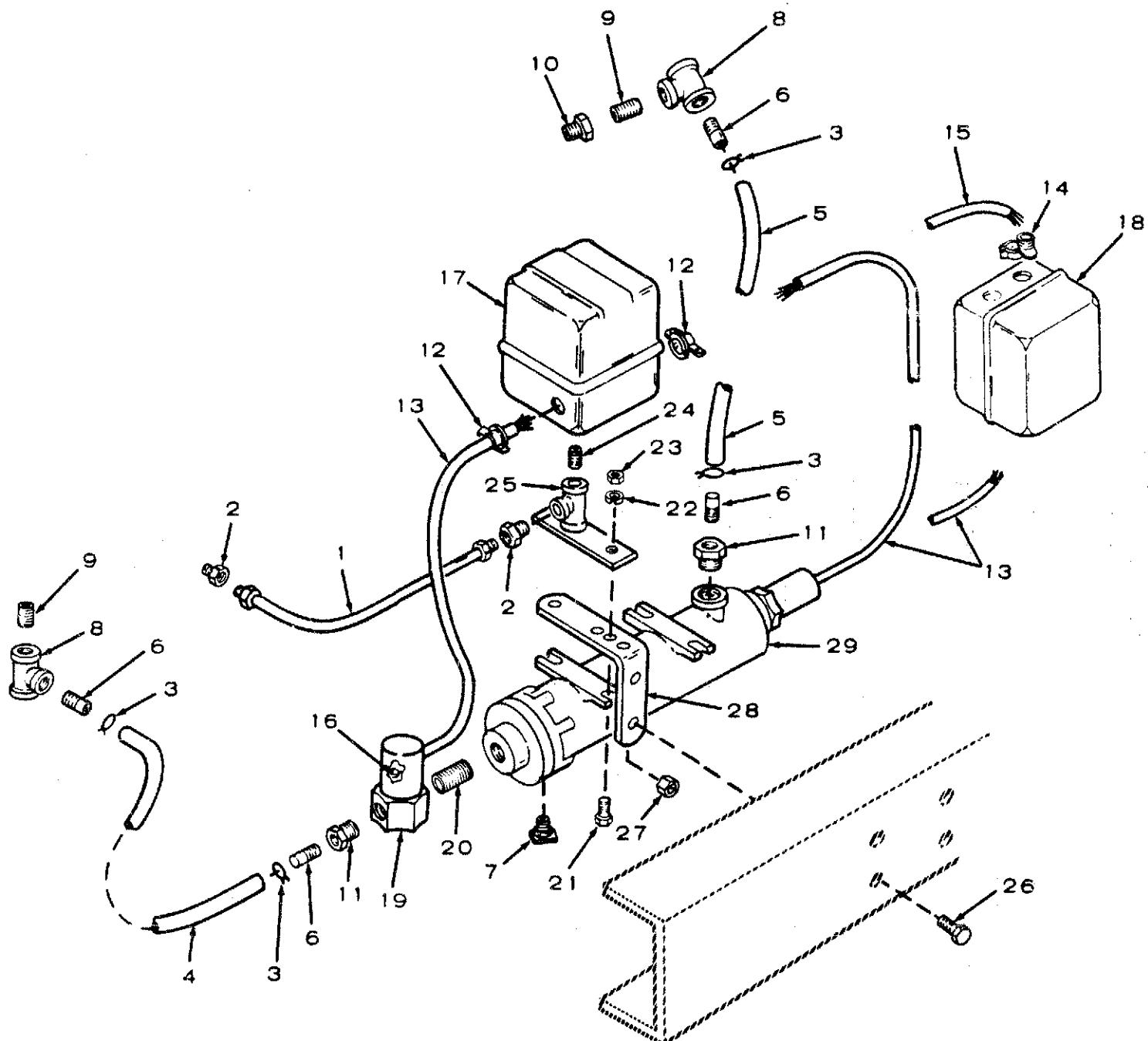


**OPTIONAL
ENGINE COOLANT HEATER
(VERTICAL TANK)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ENGINE COOLANT HEATERS			
		1	120 Volt, 1500 Watts
		1	120 Volt, 2000 Watts
		1	208/240 Volt, 1875-2000 Watts
1	812-0076	2	Screw, Machine - Round Head (#8-32 x 5/16")
2	850-0025	2	Washer, Lock - Spring (#8)
3	COVER, THERMOSTAT BOX		
	333-0013	1	Used on 120 Volt Applications
	333-0056	1	Used on 240 Volt Applications
4	870-0053	2	Nut, Hex (#10-32)
5	850-0030	2	Washer, Lock - Spring (#10)
6	SWITCH, THERMOSTATIC		
	309-0285	1	120/250 Volt, 40-25 Amp. SPST (100 Deg Close, 130 Deg Open)
	309-0256	1	120/250 Volt, 40-25 Amp. DPST (100 Deg Close, 130 Deg Open)
7	STUD		
	520-0446	2	#10-32 x 3/4"
	520-0672	2	#10-32 x 1"
8	508-0008	2	Grommet, Rubber
9	BOX, THERMOSTAT		
	333-0012	1	Used on 120 Volt Application
	333-0057	1	Used on 208/240 Volt Applications
10	862-0015	1	Nut, Hex (5/16-18)
11	856-0008	2	Washer, Lock - EIT (5/16")
12	526-0115	2	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
13	800-0031	1	Screw, Cap - Hex Head (5/16-18 x 1- 1/2")
14	800-0091	1	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
15	850-0060	1	Washer, Lock - Spring (1/2")
16	856-0013	1	Washer, Lock - EIT (1/2")
17	130-0755	1	Bracket, Mounting - Heater
18	503-0183	4	Clamp, Hose
19	503-0113	1	Hose, Rubber (5/8" ID x 61/64" OD x 16" Lg)
20	503-1000	1	Hose, Rubber (5/8" ID x 61/64" OD x 9" Lg)
21	505-0135	2	†Nipple, Pipe - Half 3/8" NPT x 1-1/2" Lg)
22	HEATER, ENGINE COOLANT (Includes Mounting Strap)		
	333-0052	1	1500 Watts, 120 Volt
	333-0053	1	2000 Watts, 120 Volt
	333-0073	1	2000 Watts, 208/240 Volt
23		1	Strap, Mounting - (Part of Heater)

† - Parts used with 2000 Watt Heaters only.

**OPTIONAL
ENGINE COOLANT HEATER**



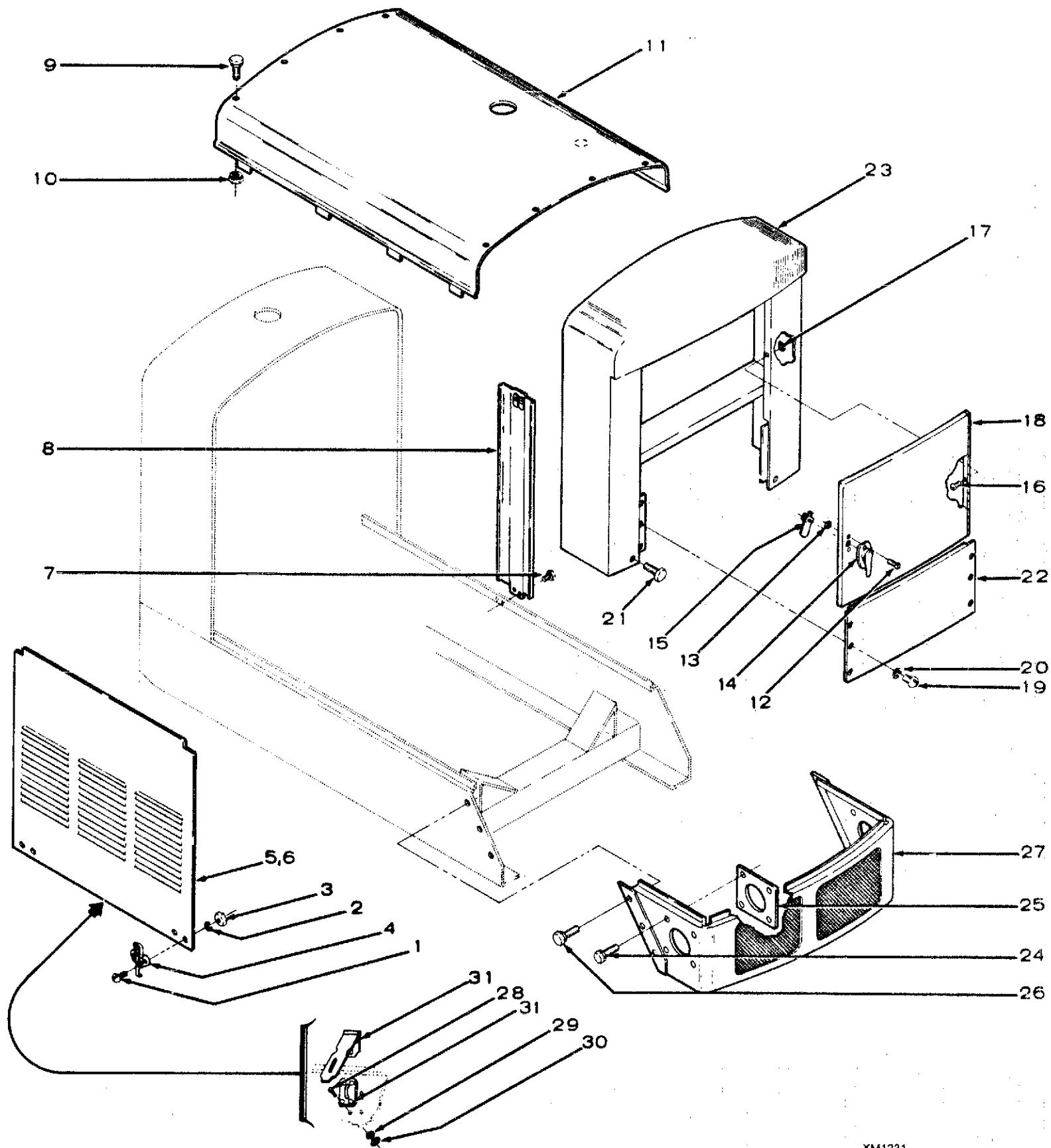
CS-1108

OPTIONAL ENGINE COOLANT HEATER

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ENGINE COOLANT HEATER							
		1	115 Volt, 1 Phase	16	CONNECTORS	332-0149	8
		1	480 Volt, 1 Phase				Terminal, Lug (Used on White Leads)
		1	240 Volt, 1 Phase	323-0957		2	Wire Nut (Used on Black Leads)
		1	208 Volt, 1 Phase	17	309-0307	1	Switch, Pressure - Oil
		1	380 Volt, 3 Phase	18	CONTACTOR (Select by Applicable Voltage)		
		1	208 Volt, 3 Phase	307-1460		1	240 Volt, 30 Amp
		1	480 Volt, 3 Phase	307-1164		1	480 Volt, 30 Amp
1	501-0227	1	Line, Fuel - Flexible	19	309-0304	1	Switch, Thermostatic
2	505-0007	2	Bushing, Reducer (1/4" NPT x 1/8" NPT)	20	505-0004	1	Nipple, Pipe - Close (1" NPT x 1-1/2" Lg)
3	503-0183	4	Clamp, Hose	21	800-0007	4	Screw, Cap - Hex Head (1/4-20 x 1")
4	503-0843	1	Hose, Rubber (5/8" ID x 61/64" OD x 40" Lg)	22	850-0040	4	Washer, Lock - Spring (1/4")
5	503-0833	1	Hose, Rubber (5/8" ID x 61/64" OD x 24" Lg)	23	862-0001	4	Nut, Hex (1/4-20)
6	505-0135	4	Nipple, Pipe - Half (3/8" NPT x 1-1/2" Lg)	24	505-0099	1	Nipple, Pipe - Close (1/4" NPT x 7/8" Lg)
7	504-0003	1	Cock, Drain (1/4" NPT)	25	333-0142	1	Support with Tee - Pressure Switch Mounting
8	505-0060	2	Tee, Pipe (3/8" NPT)	26	821-0016	4	Screw, Self-locking - Hex Washer Head (5/16-18 x 3/4")
9	505-0101	2	Nipple Pipe - Close (3/8" NPT x 1")	27	870-0257	4	Nut, Self-locking - Hex Washer Head (5/16-18)
10	505-0131	1	Bushing, Reducer (3/4" NPT x 3/8" NPT)	28	130-1192	2	Bracket, Angle - Heater Mounting
11	505-0455	1	Bushing, Reducer (1" NPT x 3/8" NPT)	29	HEATER, ELECTRICAL - ENGINE COOLANT (Select As Applicable)		
12	331-0027	2	Clamp, Cable (3/8" OD Cable)	333-0158		1	2000 Watts, 115 Volt, 1 Phase
13	#		Cord, Electrical - 2 #14, Type So, 600 Volt, 60"	333-0167		1	2000 Watts, 208 Volt, 1 Phase
14	331-0027	4	Clamp, Cable (3/8" OD Cable) - Used with Contactor only	333-0148		1	2000 Watts, 208 Volt, 3 Phase
15	CABLE, ELECTRICAL (Type So, 600 Volt)			333-0141		1	2000 Watts, 240 Volt, 1 Phase
#			3 - #12 (Used on Single Phase Hookup)	333-0176		1	2000 Watts, 380 Volt, 1 Phase
#			4 - #14 (Used on Three Phase Hookup)	333-0170		1	2000 Watts, 380 Volt, 3 Phase
				333-0147		1	2000 Watts, 480 Volt, 1 Phase
				333-0146		1	2000 Watts, 480 Volt, 3 Phase

Electrical Cable and Cord Shown For Reference Purpose Only.

OPTIONAL SET HOUSING

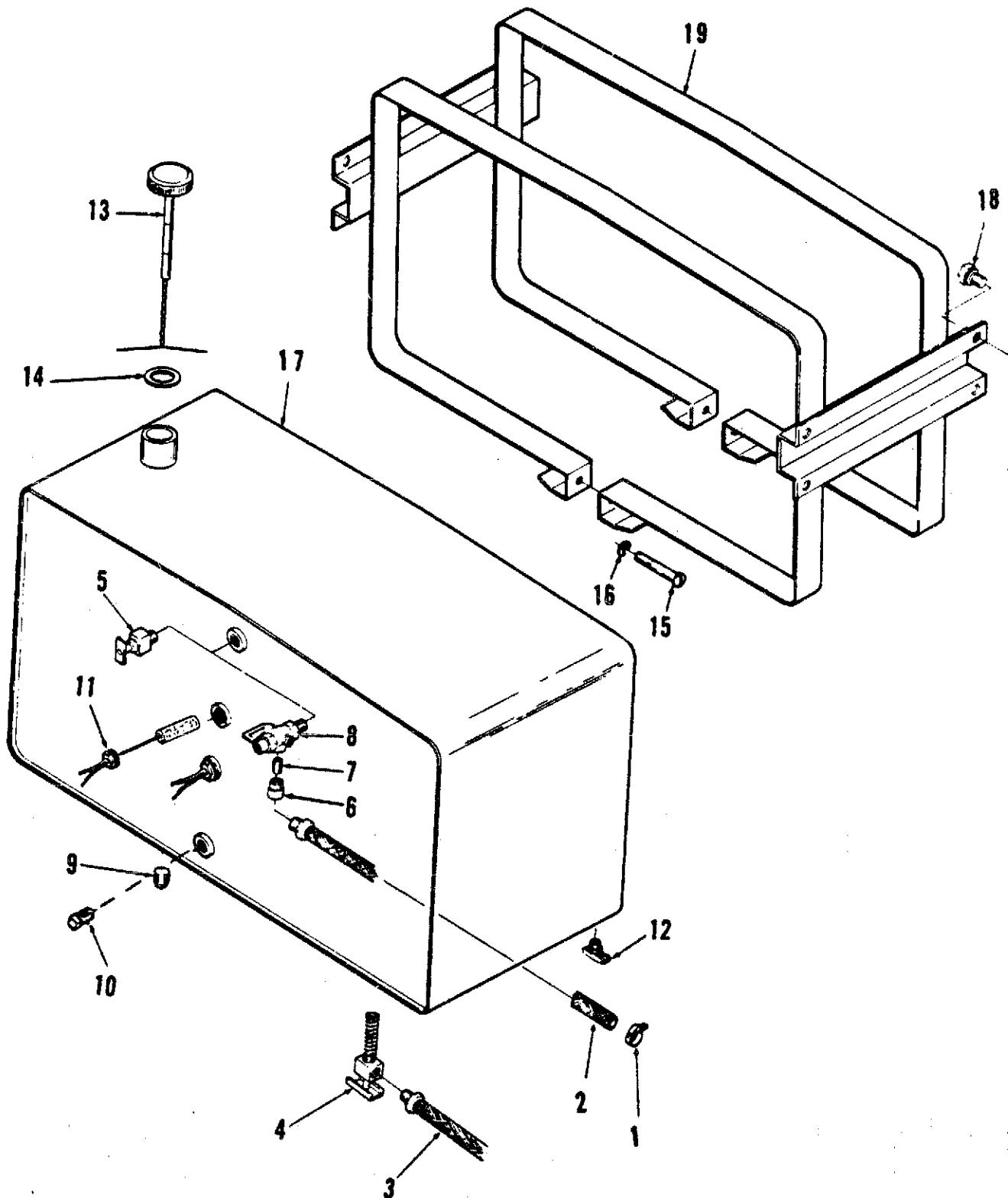


XM1231

OPTIONAL SET HOUSING

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	813-0098	16	Screw, Machine - Round Head (#10-32 x 3/8")	14	406-0157	1	Handle, Latch (With Keys)
2	850-0030	16	Washer, Lock - Spring (#10)	15	406-0089	1	Catch, Latch
3	870-0053	16	Nut, Hex (#10-32)	16	809-0059	3	Screw, Tapping - Pan Head (1/4 x 1/2")
4	406-0105	8	Clamp, Door (2 Required Each Door)	17	870-0106	3	Nut, Sheet Spring (1/4")
5	405-1804	2	Door, Access, Louvered - Engine Section (Door Clamps Not Included)	18	405-1777	1	Door, Access - Rear
6	405-1804	2	Door, Access, Louvered - Generator Section, (Door Clamps Not Included)	19	813-0098	6	Screw, Machine - Round Head (#10-32 x 3/8")
7	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")	20	850-0030	6	Washer, Lock - Spring (#10)
8	405-1776	2	Support, Housing - Center	21	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
9	821-0014	12	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")	22	405-2158	1	Panel, Access - Rear
10	870-0113	12	Nut, Clinch (5/16-18)	23	405-2159	1	Panel, Housing - Rear
11	405-2153	1	Panel, Housing - Top	24	821-0010	8	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
12	812-0149	2	Screw, Machine - Round Head (1/4-20 x 9/16")	25	403-0895	2	Plate, Cover
13	870-0232	2	Nut, Self-locking, Hex - With ET Lockwasher (1/4-20)	26	821-0029	6	Screw, Self-locking - Hex Washer Head (3/8-16 x 3/4")
				27	403-0894	1	Chassis - Rear
				28	814-0079	28	Screw, Machine - Flat Head (#8-32 x 1/2")
				29	850-0025	28	Washer, Lock - Spring (#8)
				30	860-0008	28	Nut, Hex (#8-32)
				31	406-0249	4	Hasp Set - Optional

**OPTIONAL
FUEL TANK-MOUNTED
(HOUSED SETS)**

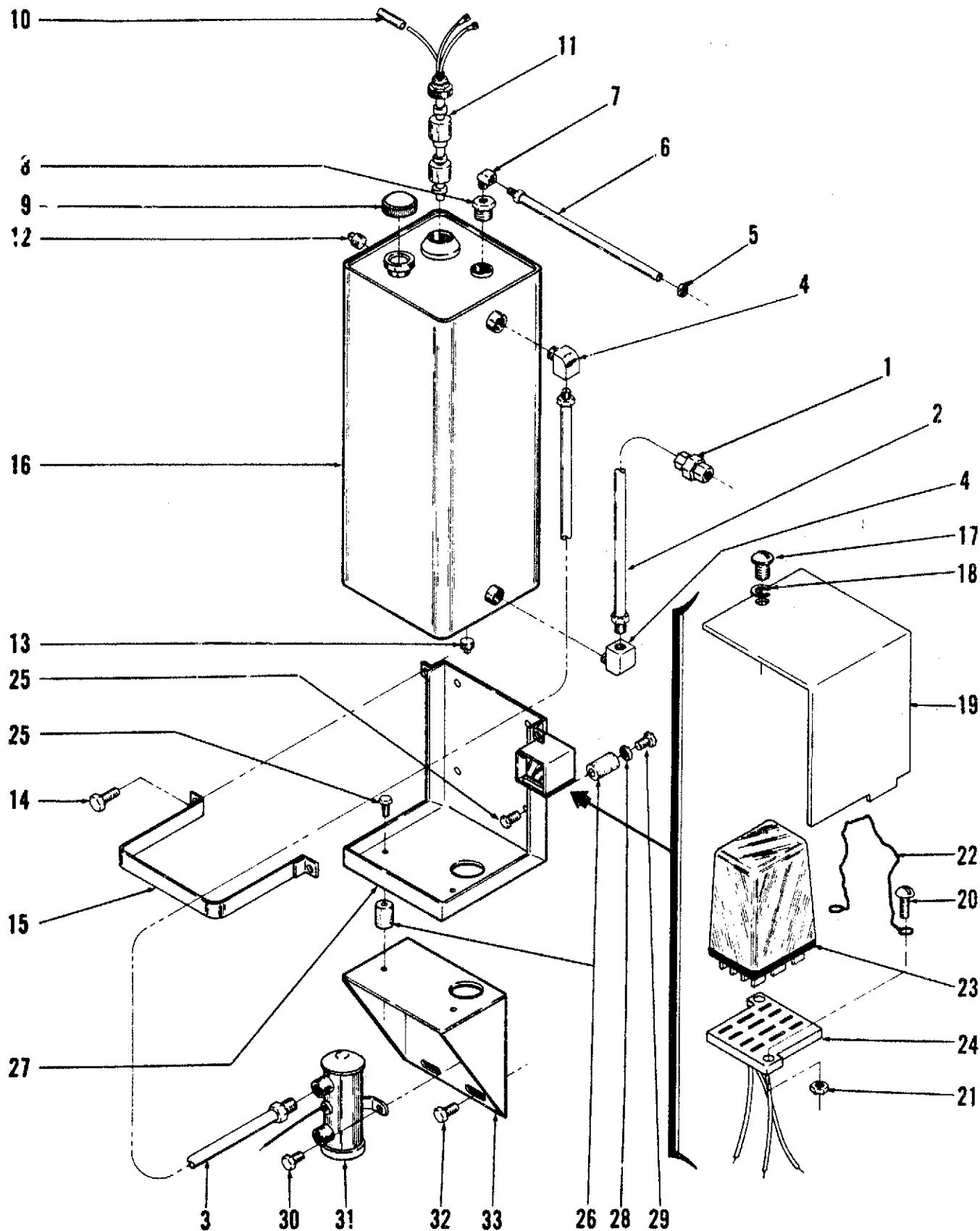


**OPTIONAL
FUEL TANK-MOUNTED
(HOUSED SETS)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0685	1	Clamp, Hose (1/2" OD Hose)	10	505-0130	2	Plug, Pipe - Square Head (3/4" NPT)
2	LINE, FUEL - FLEXIBLE (Select as Required)			11	309-0326	2	Switch, Fuel Level
	501-0104	1	48" Lg, 1/4 SAE Male Swivel	12	504-0005	1	Cock, Drain (1/8" NPT)
	501-0205	1	72" Lg, 1/4 SAE Male Swivel	13	159-0512	1	Cap and Indicator, Fuel (Includes Gasket)
3	LINE, FUEL - FLEXIBLE (Select Length as Required)		(1/8 NPT Male x 1/4 SAE Male Swivel with 7/16-24 Thd)	14	159-0751	1	Gasket, Fuel Cap
	501-0004	1	12" Lg	15	812-0158	2	Screw, Machine - Round Head (1/4-20 x 2")
	501-0007	1	24" Lg	16	850-0040	2	Washer, Lock - Spring (1/4")
	501-0009	1	36" Lg	17	TANK, FUEL - 20 GAL		
	501-0027	1	48" Lg	159-0490	1	With Two Fuel Ports	
	501-0016	1	52" Lg	159-1025	1	With Three Fuel Ports	
	501-0094	1	60" Lg	159-1103	1	With Three Fuel Ports and Two Switch Ports	
	501-0017	1	64" Lg	18	821-0010	8	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2")
	501-0247	1	68" Lg	19	159-0489	1	Strap Assembly - Tank Mounting
4	504-0013	1	Valve, Shutoff - with Screen (1/8" NPT)				
5	504-0007	1	Valve, Shutoff (1/8" NPT)				
6	502-0017	1	Connector, Inverted Female				
7	502-0046	1	Nipple, Pipe - Close, Brass (1/8" NPT x 3/4" Lg)				
8	504-0004	2	Valve, Shutoff - 3 Way				
9	505-0057	1	Plug, Pipe - Square Head (1/8" NPT)				

NOTE: Tank 159-1025 may be substituted for tank 159-0490.
use a Pipe Plug in unused port.

**OPTIONAL
FUEL TANK RESERVOIR
(HOUSED SETS)**

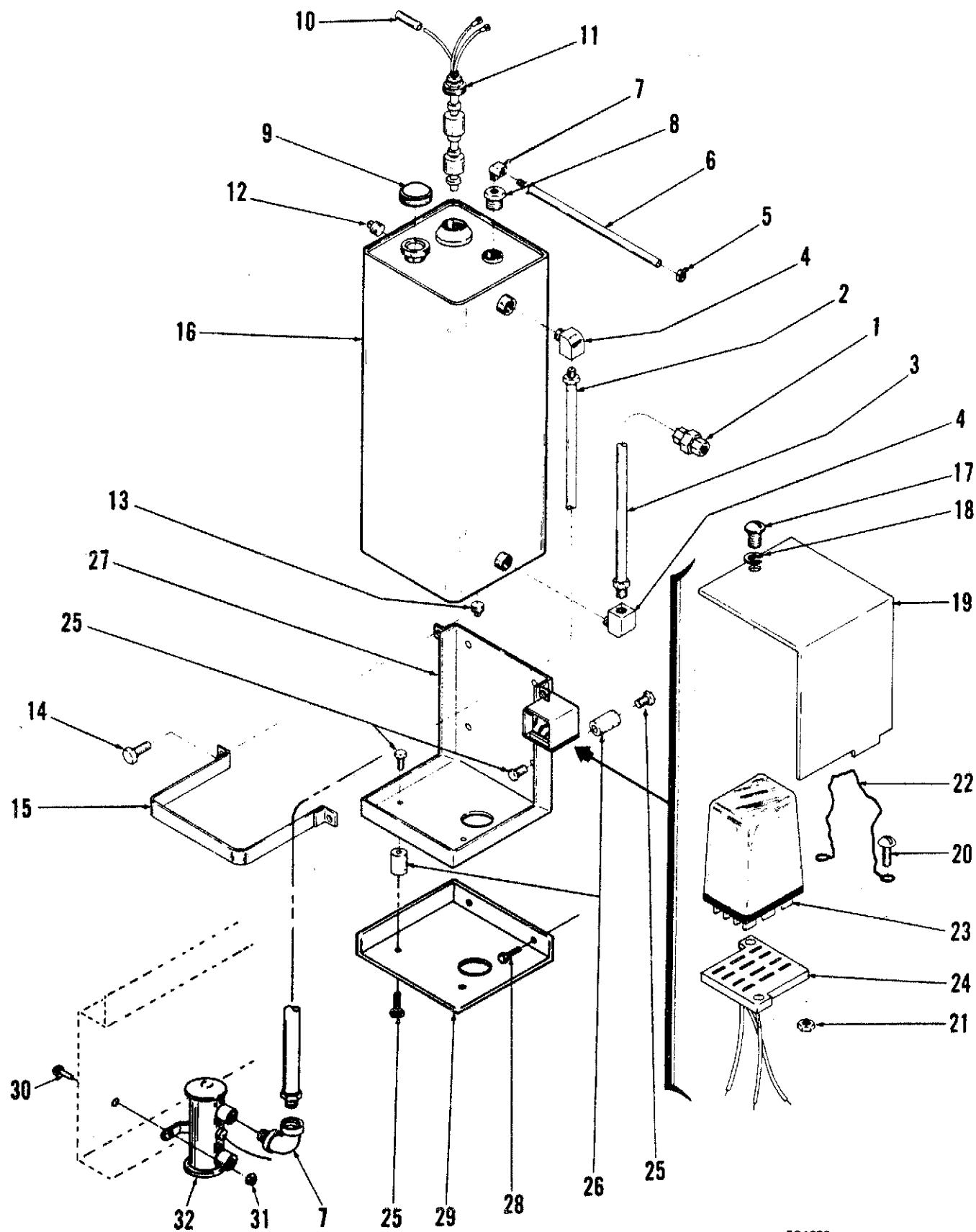


XFS1269

**OPTIONAL
FUEL TANK RESERVOIR
(HOUSED SETS)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
FUEL TANK RESERVOIR							
1	502-0051	1	For Housed Sets	17	813-0098	1	Screw, Machine - Round Head (#10-32 x 3/8")
2	501-0008	1	Coupling, Pipe - Brass (1/4" NPT)	18	850-0030	1	Washer, Lock - Spring (#10)
3	501-0015	1	Line, Fuel - Flexible	19	415-0326	1	Cover, Access - Relay
4	502-0041	2	Line, Fuel - Flexible	20	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
5	503-0685	1	Elbow, Pipe - Street, 90 DEG, Brass (1/4" NPT) - Inverted Male	21	870-1183	2	Nut, Self-locking, Hex - with External Tooth Lock Washer (#6-32)
6	501-0226	1	Clamp, Hose	22	307-1157	1	Spring, Hold Down - Relay
7	502-0020	1	Line, Fuel - Flexible	23	307-1058	1	Relay - 12 VDC
8	502-0029	1	Elbow, Pipe - Street, 90 DEG, Brass (1/8" NPT)	24	323-0897	1	Socket, Relay (Included Leads)
9	159-0007	1	Bushing, Reducer - Hex (1/4" NPT x 1/8" NPT)	25	821-0014	6	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
10	332-0556	4	Cap, Fuel Tank	26	402-0070	4	Mount, Vibration
11	415-0335	1	Connector, Splice	27	415-0324	1	Bracket, Mounting - Fuel Tank
12	505-0054	1	Switch, Float - Liquid Level	28	870-0048	2	Nut, Self-locking, Hex Washer Head (5/16-18)
13	505-0110	1	Plug, Pipe - Square Head (1/4" NPT)	29	821-0016	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 3/4")
14	821-0013	2	Plug, Pipe - Square Head (3/8" NPT)	30	821-0018	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")
15	415-0323	1	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")	31	149-1830	1	Pump, Fuel - Electric, 12 VDC
16	415-0325	1	Strap, Retaining - Tank	32	821-0014	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
			Tank, Fuel - Day	33	130-1005	1	Bracket, Mounting - Fuel Pump

**OPTIONAL
FUEL TANK RESERVOIR
(UNHOUSED SETS)**

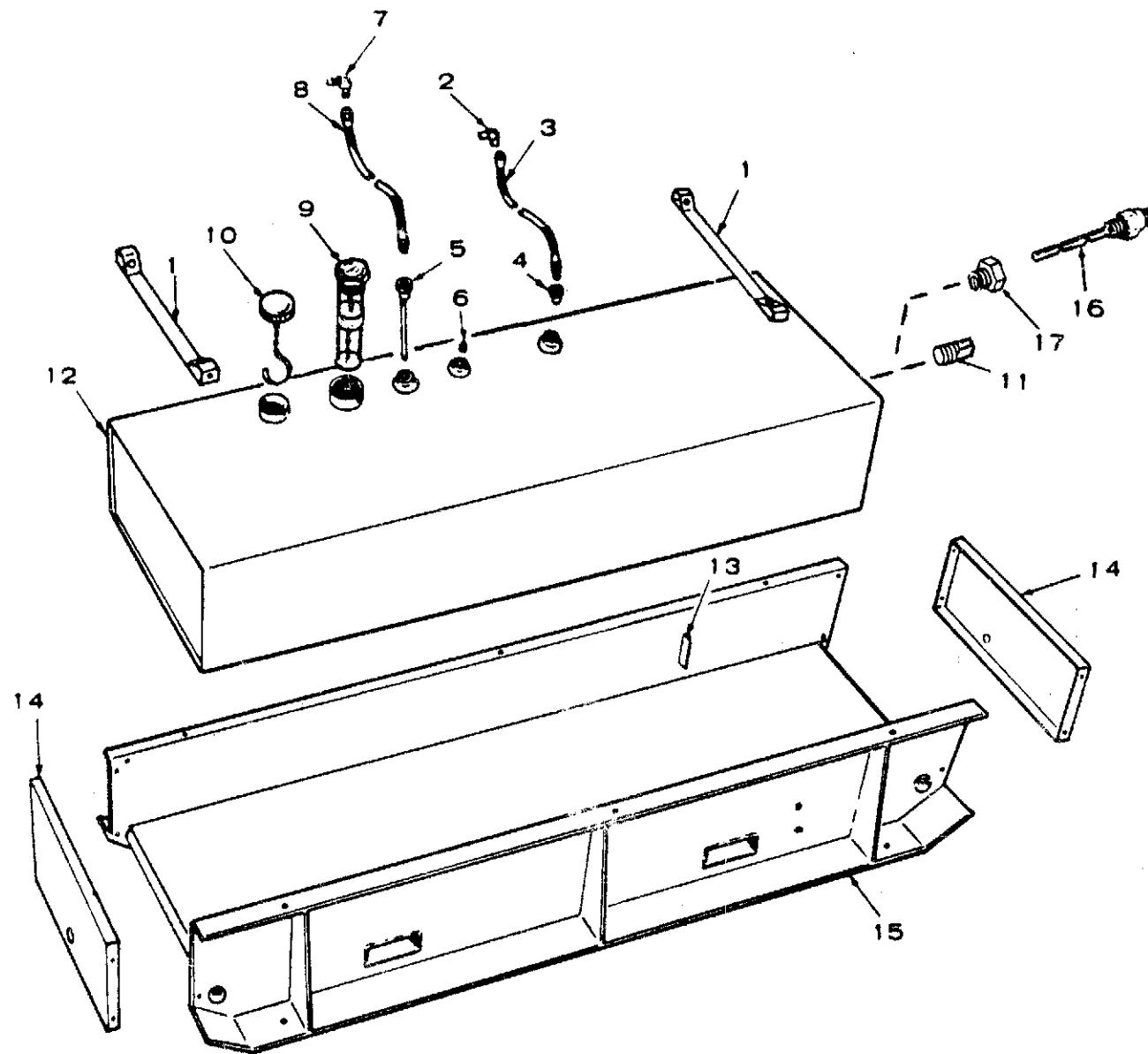


FS1270

FUEL TANK RESERVIOR (UNHOUSED SETS)

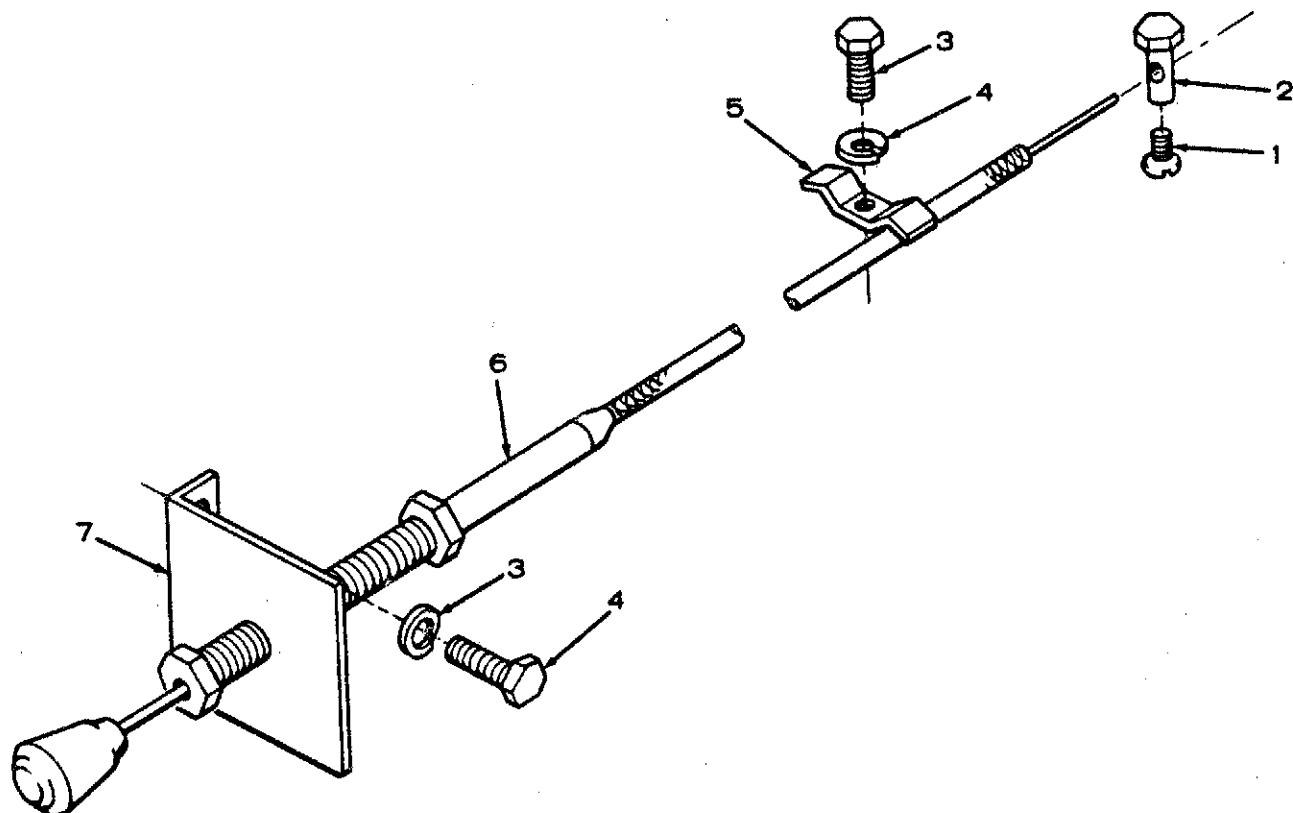
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
FUEL TANK RESERVIOR							
1	502-0051	1	For Unhoused Sets	16	415-0325	1	Tank, Fuel - Day
		1	Coupling, Pipe - Brass (1/4" NPT)	17	813-0098	1	Screw, Machine - Round Head (#10-32 x 3/8")
2	501-0008	1	Line, Fuel - Flexible	18	850-0030	1	Washer, Lock - Spring (#10)
3	501-0007	1	Line, Fuel - Flexible	19	415-0326	1	Cover, Access - Relay
4	502-0041	2	Elbow, Pipe - Street, 90 DEG, Brass (1/4" NPT) - Inverted Male	20	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
5	503-0685	1	Clamp, Hose	21	870-1183	2	Nut, Self-locking, Hex - with External Tooth Lock Washer (#6-32)
6	501-0226	1	Line, Fuel - Flexible	22	307-1157	1	Spring, Hold Down - Relay
7	502-0020	2	Elbow, Pipe - Street, 90 DEG, Brass (1/8" NPT)	23	307-1058	1	Relay - 12 VDC
8	502-0029	1	Bushing, Reducer - Hex (1/4" NPT x 1/8" NPT)	24	323-0897	1	Socket, Relay (Includes Leads)
9	159-0007	1	Cap, Fuel Tank	25	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
10	332-0556	4	Connector, Splice	26	402-0070	4	Mound, Vibration
11	415-0335	1	Switch, Float - Liquid Level	27	415-0324	1	Bracket, Mounting - Fuel Tank
12	505-0054	1	Plug, Pipe - Square Head (1/4" NPT)	28	821-0014	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
13	505-0110	1	Plug, Pipe - Square Head (3/8" NPT)	29	403-1118	1	Plate, Support - Fuel Tank
14	821-0013	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")	30	821-0018	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")
15	415-0323	1	Strap, Retaining - Tank	31	870-0212	2	Nut, Self-locking - Hex Washer Head (1/4-20)
				32	149-1830	1	Pump, Fuel - Electric, 12 VDC

**OPTIONAL
FUEL TANK AND SUB BASE**



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	159-1007	2	Strap, Hold-down - Fuel Tank	16	130-1424	1	Sensor, Fuel Level
2	502-0005	1	Elbow	17	505-0316	1	Bushing, Reducer - Special
3	501-0196	1	Line, Fuel - Flexible				ATTACHING HARDWARE - NOT ILLUSTRATED (Select as Applicable)
4	505-0018	1	Bushing, Reducer	800-0050	12		Screw, Cap - Hex Head (3/8-16 x 1")
5	415-0318	1	Pipe, Suction	800-0051	4		Screw, Cap - Hex Head (3/8-16 x 1-1/4")
6	505-0334	1	Plug, Pipe	800-0091	6		Screw, Cap - Hex Head (1/2-13 x 1-1/4")
7	502-0002	1	Elbow	850-0050	16		Washer, Lock - Spring (3/8")
8	501-0103	1	Line, Fuel - Flexible	850-0060	6		Washer, Lock - Spring (1/2")
9	193-0217	1	Gauge, Liquid Level	526-0219	5		Washer, Flat (17/32" ID 1" OD x 1/8" Thk)
10	159-0020	1	Cap, Tank	862-0003	16		Nut, Hex (3/8-16)
11	505-0247	1	Plug, Pipe	862-0016	6		Nut, Hex (1/2-13)
12	159-1006	1	Tank, Fuel - 58 Gallon				
13	159-1005	2	Stop, Fuel Tank				
14	403-1009	2	Plate, End - Sub-Base				
15	403-1007	1	Base, Sub - Fuel Tank				

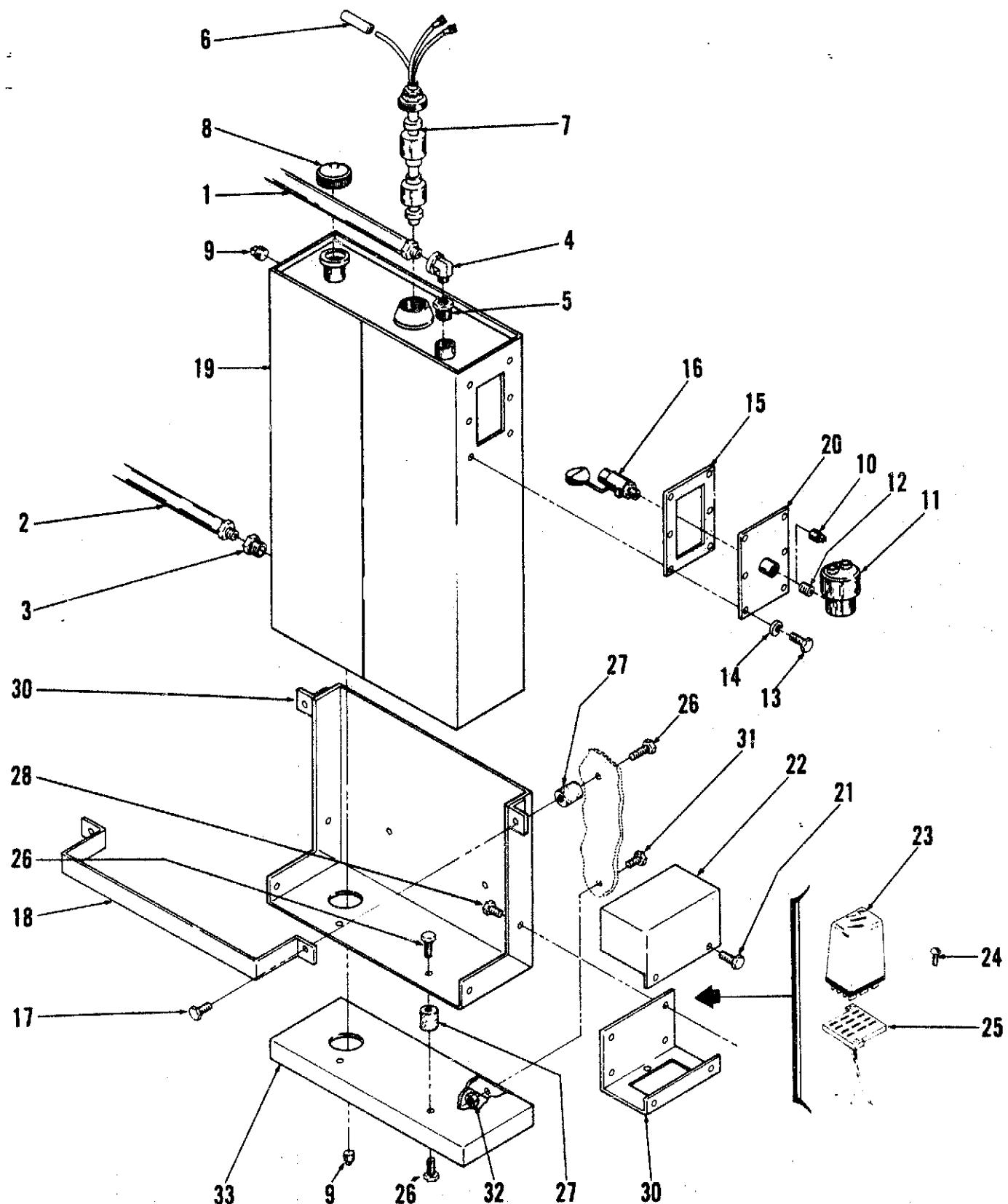
OPTIONAL VERNIER THROTTLE



M-1179

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	812-0075	1	Screw, Machine - Round Head (#8-32 x 1/4")
2	152-0158	1	Swivel
3	800-0005	3	Screw, Cap - Hex Head (1/4-20 x 3/4")
4	850-0040	3	Washer, Lock - Spring (1/4")
5	152-0036	1	Clamp, Holddown - Cable
6	152-0120	1	Throttle Control - Vernier
7	151-0230	1	Bracket, Mounting - Throttle Control

**OPTIONAL
FUEL TANK RESERVOIR
(OVERHEAD/UNDERGROUND
APPLICATIONS)**

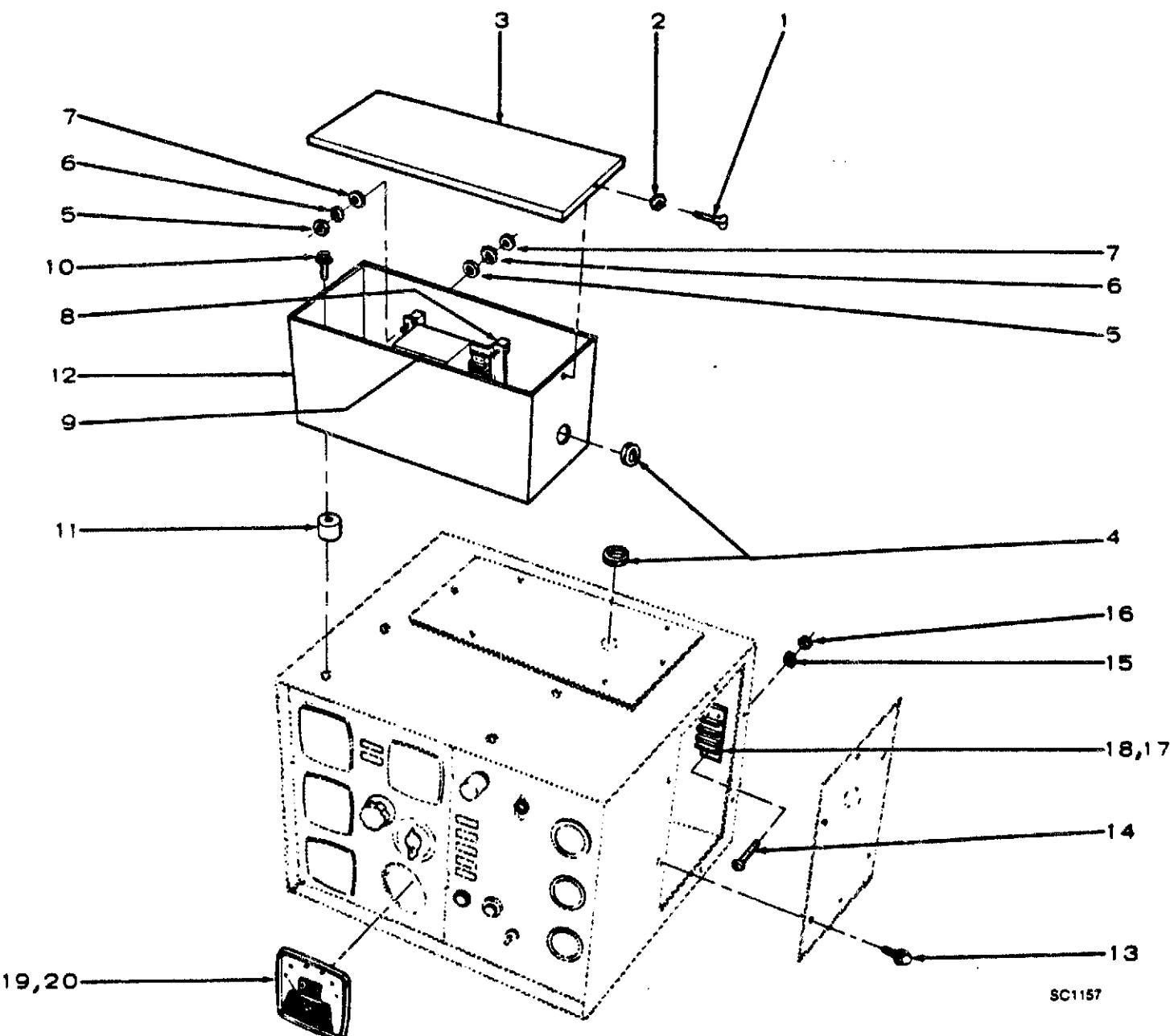


XFS1271

**OPTIONAL
FUEL TANK RESERVOIR
(OVERHEAD/UNDERGROUND
APPLICATIONS)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
FUEL TANK RESERVOIR							
		1	£ Overhead Tank Application	17	821-0013	2	Screw, Self-locking - Hex
		1	† Underground Tank Application	18	415-0451	1	Washer Head (1/4-20 x 1")
1	501-0226	1	Line, Fuel - Flexible	19	415-0468	1	Strap, Retaining - Fuel Tank
2	501-0321	1	Line, Fuel - Flexible	20	415-0516	1	Tank, Fuel - Day (Includes Access Cover Plate)
3	502-0029	1	Bushing, Reducer - Hex (1/4" NPT x 1/8" NPT)	21	821-0004	2	Plate, Cover - Access
4	502-0020	1	Elbow, Pipe - Street, 90 DEG (1/8" NPT)	22	415-0464	1	Screw, Self-locking - Hex
5	502-0029	1	Bushing, Reducer - Hex (1/4" NPT x 1/8" NPT)	23	307-1058	1	Washer Head (#10-32 x 5/16")
6	332-0556	4	Connector, Splice	24	812-0079	2	Cover, Access - Relay
7	415-0466	1	Switch, Float - Liquid Level	25	323-0804	1	Relay - 12 VDC
8	159-0007	1	Cap - Fuel Tank	26	821-0014	8	Screw, Machine - Round Head (#8-32 x 1/2")
9	502-0155	2	Plug, Pipe - Square Head, Brass (3/8" NPT)	27	402-0078	4	Socket, Relay
10	505-0057	1	†Plug, Pipe - Square Head (1/8" NPT)	28	821-0008	2	Screw, Self-locking - Hex
11	307-0565	1	£Solenoid - 12 VDC	29	415-0463	1	Washer Head (1/4-20 x 5/16")
12	505-0098	1	£Nipple, Pipe - Close (1/8" NPT x 3/4")	30	415-0471	1	Box, Control - Relay
13	800-0002	6	Screw, Cap - Hex Head (1/4-20 x 3/8")	31	821-0014	6	Bracket, Mounting - Fuel Tank
14	526-0063	6	Washer, Flat - Copper (17/64" ID x 7/16" OD x 1/32" Thk)	32	870-0045	3	Screw, Self-locking - Hex
15	415-0467	1	Gasket - Access Plate	33	415-0449	1	Washer Head (5/16-18 x 1/2")
16	309-0401	1	£Valve, Float				Nut, Hex (5/16-18)
							Bracket, Support - Fuel Tank
							† - Parts used only in Underground Tank Application.
							£ - Parts used only in Overhead Tank Application.

OPTIONAL WATTMETER



SC1157

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	815-0026	2	Screw, Machine - Truss Head (#10-32 x 3/8")	15	853-0003	4	Washer, Lock - External Tooth (#6)
2	853-0008	2	Washer, Lock - External Tooth (#10)	16	860-0006	4	Nut, Hex (#6-32)
3	301-3476	1	Cover - Transducer Box	17	332-0609	1	Terminal, Strip
4	508-0001	2	Grommet, Rubber (1-1/6" OD)	18	332-0610	1	Marker, Strip
5	860-0008	8	Nut, Hex (#8-32)	19	302-1102	1	Wattmeter (Less Replaceable Dial)
6	853-0005	8	Washer, Lock - External Tooth (#8)	20	DIAL, WATTMETER (Select as Required)		
7	526-0003	8	Washer, Flat (11/64" ID x 3/8" OD x 1/32" Thk)	302-1103		1	Scale 0-35 kW
8	402-0354	4	Mount, Vibration	302-1104		1	Scale 0-50 kW
9	TRANSDUCER (Select as Required)			302-1105		1	Scale 0-70 kW
	302-1082	1	60 Hertz	302-1106		1	Scale 0-90 kW
	302-1083	1	50 Hertz	302-1107		1	Scale 0-115 kW
10	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")	302-1108		1	Scale 0-160 kW
11	402-0070	4	Mount, Vibration	302-1109		1	Scale 0-180 kW
12	301-3477	1	Box, Transducer	302-1110		1	Scale 0-200 kW
13	815-0350	6	Screw, Tapping - Hex Washer Head (#10-32 x 3/8")	302-1115		1	Scale 0-250 kW
14	812-0063	4	Screw, Machine - Round Head (#6-32 x 1/2")	302-1116		1	Scale 0-300 kW
				302-1117		1	Scale 0-350 kW
				302-1118		1	Scale 0-400 kW
				302-1119		1	Scale 0-450 kW
				302-1120		1	Scale 0-550 kW
				302-1121		1	Scale 0-650 kW
				302-1122		1	Scale 0-750 kW

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